



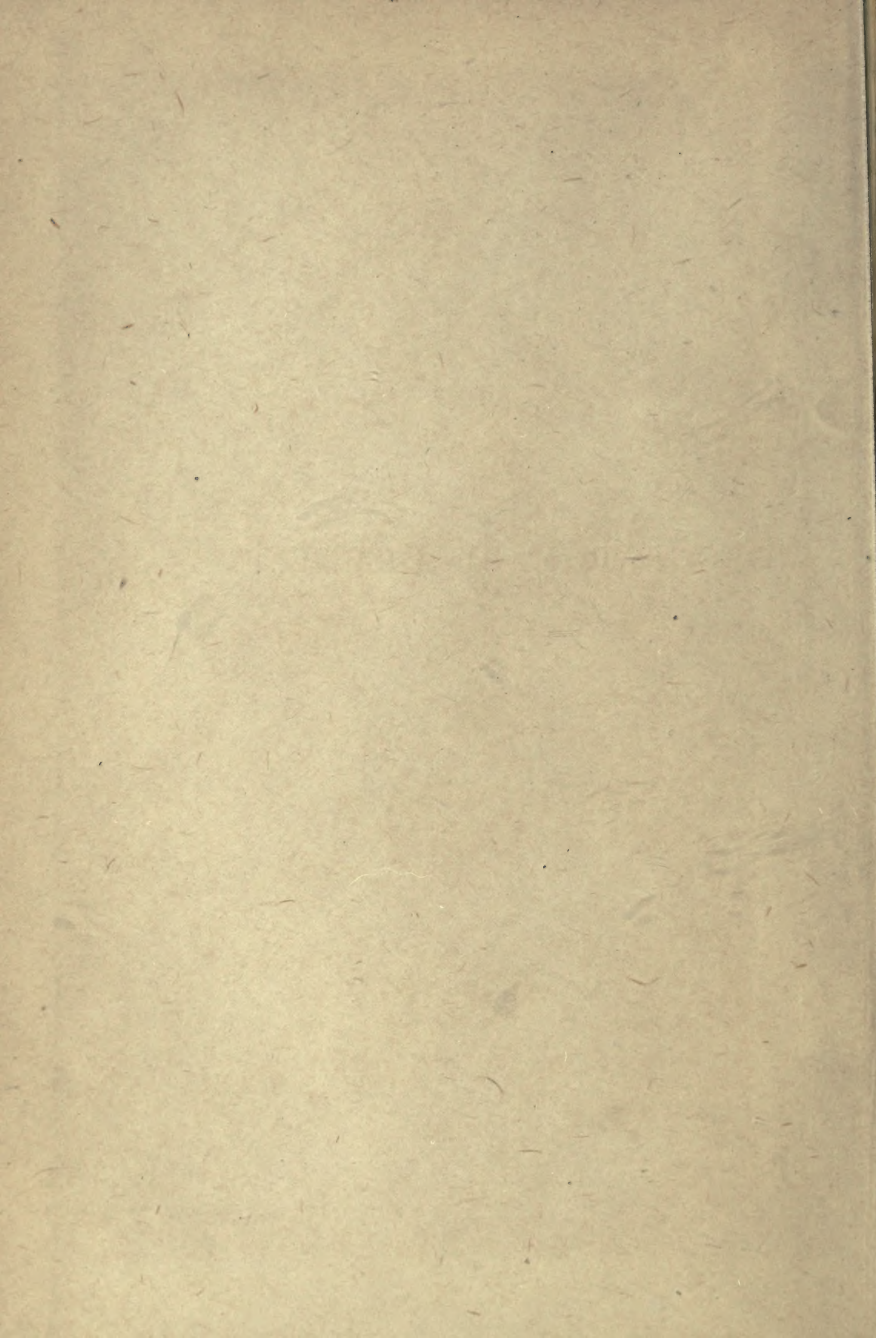
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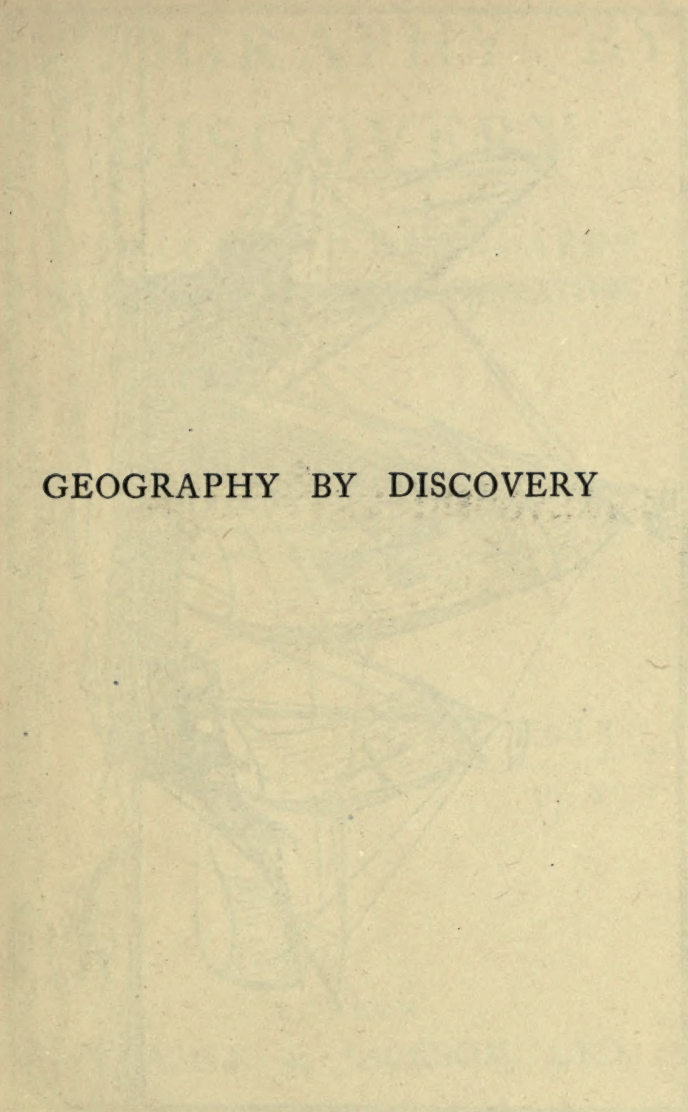
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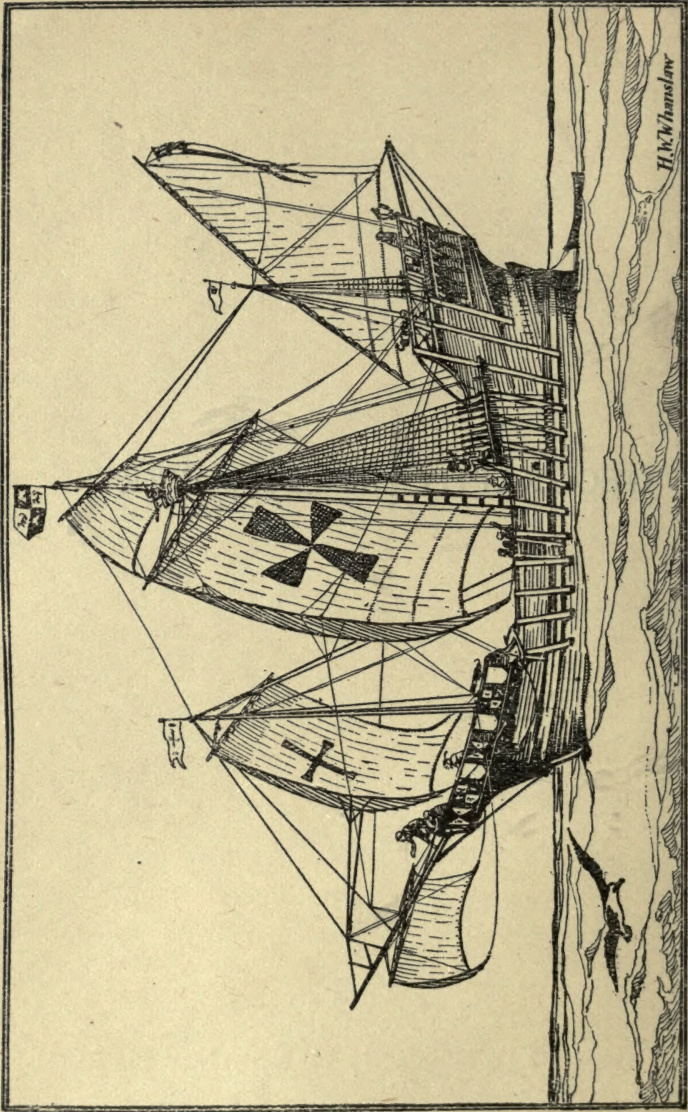
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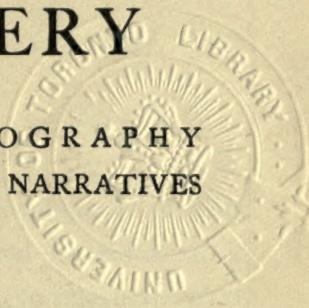


THE SHIP OF COLUMBUS, "THE SANTA MARIA."

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GEOGRAPHY BY DISCOVERY

A PRACTICAL GEOGRAPHY
BASED ON EXPLORERS' NARRATIVES



BY

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PREFACE

THE principal object of this small volume is to place in the hands of pupils some original sources of world geography, and thereby to interest, to instruct, and to train. The extracts have been chosen from English texts, some of which are already in school libraries. The suggested method of study is not mere theory, but has been put to the test by the author with children in elementary schools from Standard IV. to Standard VII. The results obtained appear to justify the present publication. Some of the exercises at the end of the book are sufficiently difficult for pupils in the upper forms of secondary schools.

The extracts in Chapter II. are taken from "The Travels of Marco Polo" (Everyman's Library, Messrs. J. M. Dent and Sons), in Chapters III. and V. from the "Discovery of America," and in Chapter IV. from "The Earliest Voyages Round the World" (Cambridge Travel Books, Cambridge University Press); in the remaining chapters the extracts are taken from

Hakluyt's "The Principal Voyages of the English Nation" (Everyman's Library, 8 vols.). A few slight alterations have been made where it was thought necessary.

The author wishes to thank the Cambridge University Press, Messrs. J. M. Dent and Sons, and the Hakluyt Society for permission to use these texts.

Suggestions and criticisms from teachers of geography will be welcomed by the author.

JOHN JONES.

HOMERTON COLLEGE,
CAMBRIDGE,
May, 1920.

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GEOGRAPHY BY DISCOVERY

CHAPTER I

INTRODUCTION AND EXERCISES

A SHORT time ago, I read in the newspaper of two soldiers, an Australian and a Canadian, who went up in an aeroplane to a greater height than anyone had ever been before. They went more than 30,000 feet up—that is, higher than the highest mountain on the earth's surface. They had a terrible experience, suffering severely from cold and from the rarity of the air. They are really modern explorers. They went to explore not lands or seas, but the upper air, and brave men they are.

A few years ago the world was shocked when it learnt of the sad death of Captain Scott and his brave comrades who had perished in the intense cold of Antarctica. These men were modern explorers, and gave their lives in the attempt to learn more of that lone, cold continent. Other men, who are still living in our own and other lands, are explorers.

They are the present-day representatives of that great company of men, who have been willing to give up ease and comfort at home, and to go out into the unknown world, there to endure great hardships and privations and stand often in danger of losing their lives. These men have usually conferred great benefits upon mankind, and generally they have received but scant reward for all their work. We who live to-day really owe a great debt to these travellers,

and although many of them are long ago dead, and we cannot repay them for what they have done for us, still we should honour their names and memories, and see that we use in the right way the knowledge they gave to us.

If we had lived in England, say, six hundred years ago, the world known to us would have been really only a very small place. If we had been the cleverest person in the land, we should have known only a little about Europe, still less about Asia and Africa, and nothing at all about North America, South America, or Australia. But during the years that have passed since then, men have travelled up and down the world from Pole to Pole, across oceans and continents, along rivers, over mountains, across deserts and through forests, so that to-day children at school know more about such distant lands as Australia and New Zealand than grown-up English people, six hundred years ago, knew about Scotland and Ireland.

In this book we shall learn something of the way in which our knowledge of the world has grown, and of the men who gained this knowledge for us. We shall find that the reasons for which they went on their travels were not always the same; sometimes the explorers were successful and accomplished what they set out to do, and sometimes they failed, but whether they gained their object or not they were always brave. We should admire bravery in men, and these men were as brave as any of the brave soldiers of whom we have heard in the great war.

Let us think of some of the perils and dangers to which these men were liable. The daring sailors who crossed the ocean had no maps by which they could learn their route: they knew not where rocks or sandbanks might wreck their ships; there were no lighthouses on the coasts to guide them into port at night; they had no accurate instruments to find out where they were; further, they had no knowledge of the direction in which the winds blew, where they would



FIG. 1.—THE HEREFORD MAPPA MUNDI.

• This sketch is made from a map of the world drawn by an English monk about the year 1300. The original map is still kept in Hereford Cathedral. It shows us what strange ideas people had of the shape of the world at that time. You should turn the map round so that the top is on your right-hand side, then perhaps you will be able to make out some of the features shown. Try to find: (1) The British Isles; (2) The Straits of Gibraltar; (3) The Mediterranean Sea; (4) The Adriatic Sea; (5) The Pyrenees; (6) The Alps; (7) The Black Sea; (8) The Danube.

meet with favouring winds, where storms might occur, or where they might lie becalmed, unable to move in one direction or the other.

Then we must remember that the ships in which they sailed were very different from our modern vessels. They were small, easily buffeted by wind and wave, sometimes hardly seaworthy, and often leaked very badly. The provisions and water they carried often did not keep fresh and good, and they had no knowledge where, or how long, it would be before they could replenish their stocks. They were very liable to sickness and disease which come from eating or drinking food that is not fresh, and sometimes many of the crew died from these terrible maladies. There was very poor accommodation both for living and sleeping upon their small craft, and when cooped up as they were in these vessels for week after week, life must have been very monotonous and trying.

Then the explorers who have travelled over land have also had dangers to face and difficulties to overcome. They had no maps to show them which way to go, or where lay the easiest routes. Generally there were no roads, and they had to cross mountains, ford or swim rivers, or cut their way through forests, and all the time perhaps they were liable to be attacked and killed by savage people living in the land. Wild beasts, poisonous snakes, and still more dangerous insects, were often lurking in the lands through which they passed; and the travellers who have crossed unknown lands are unsurpassed for bravery and courage, and we should admire these pioneers.

These early explorers of land and sea when they set out on their journeys expected to see strange and wonderful things in the lands to which they went. Their minds were prepared for this by the many fanciful tales that were current in their day. Then also, men made strange maps, and in those parts of which they knew nothing they drew

fearful-looking men and beasts—men without heads or with only one leg, beasts out of whose mouths streamed flames of fire.

The early explorers did see strange and wonderful sights in the lands they discovered, not the things, perhaps, they expected to see, and certainly not the dreadful creatures they had been told they would find. Many of the accounts written by them are still preserved, and extracts from several of these will be found in this book, so that by reading them carefully we can find out what they saw and what they experienced, described in their own words.

When these explorers returned to their native land with the information gathered on their journeys, then other people set out to these foreign countries either as traders or settlers. It was in this way that England became the great trading nation that she is, and also that she laid the foundations of her world-wide empire. England is a small land with a long coast-line, so a large number of her men have been accustomed to life at sea; and ever since the days when Raleigh, Drake, and Frobisher, men of whom we shall learn something in this book, lived, England has been a great ship-building country, and has sent her ships, carrying traders with their goods and settlers with their belongings across the ocean into far-distant lands.

EXERCISES

The first thing we should do is to test whether the accounts given by these early explorers are reliable. To do this let us try one or two simple exercises.

1. Read the account of the coconut given on p. 58 by a man who accompanied Magellan. Compare with this the account of the coconut given on p. 86, written by a man who accompanied Drake.

Do these accounts agree (1) with one another, (2) with your own knowledge of what a coconut is like?

2. Read the descriptions of the Straits of Magellan as given on pp. 51 and 89 . By whom were these accounts written ? Compare them with one another and with the map given below. [Remember the men who wrote the descriptions lived over three hundred years ago, and the map is modern,

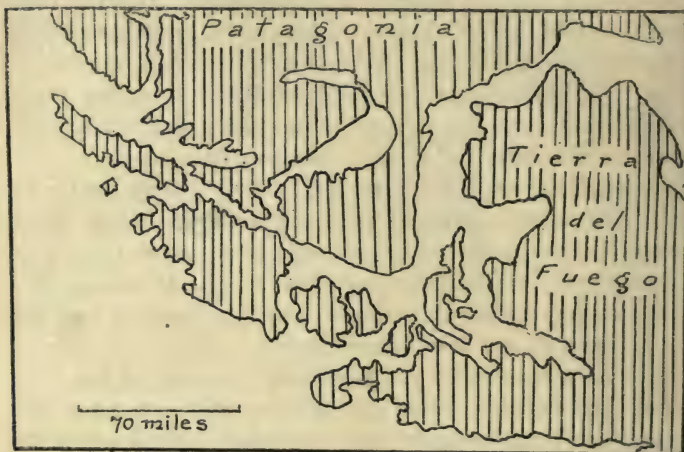


FIG. 2.—THE STRAITS OF MAGELLAN.

drawn when men had more knowledge and better means for making maps.]

3. On p. 122 there is a description of the country of Mexico, written by an Englishman in 1572, in which he tells us the following :

- (a) In Mexico there is rain from May to October.
- (b) Towards the north of Mexico there are great silver mines.
- (c) Mexico city stands in the middle of a lake.
- (d) This city is subject to many earthquakes.
- (e) There are in the country mighty high mountains and snow upon them ; they commonly burn.

Find from a geography textbook if these statements are correct.

4. Read what is said about the coconut by Marco Polo on p. 18. Does this confirm what you read in Exercise No. 1?

Are the accounts given by the early travellers trustworthy so far as you can judge by these tests?

5. To work some of the exercises in this book, you will have to know the distance between certain places. You will not be able to measure them probably on the maps in your atlas, so learn to measure them on a globe. The following scale will do :

Diameter of Globe.				Scale.	
7 inches	...	...	1 inch	=	1,136 miles.
10 "	...	...	1 "	=	800 "
12 "	...	...	1 "	=	663 "
14 "	...	...	1 "	=	566 "
15 "	...	...	1 "	=	545 "

Now find from your globe the distance from (a) Lisbon to New York, (b) San Francisco to Yokohama.

CHAPTER II

MARCO POLO—A VENETIAN

MARCO POLO was born in Venice nearly seven hundred years ago. His father was a merchant. In those days Venice was one of the most important cities in Europe. It was a port through which many valuable things were imported into Europe from Asia. The merchants of Venice were very wealthy, and many of the beautiful buildings that can be seen in Venice to-day were built by these men, the merchant princes of Venice.

When Marco Polo was a youth of seventeen years, he was taken by his father and uncle on a long journey across the continent of Asia. It was customary for the Venetian merchants to go by sea, either to the eastern end of the Mediterranean, or to the southern shores of the Black Sea, where they met the caravans which had crossed the Asiatic lands, bringing goods from such countries as Arabia, Persia, India, and far distant China. Sometimes these Venetians went inland to such towns as Damascus and Bagdad, but on this occasion the Polos set out to cross the continent right into China. In those days China was called Cathay, and the reigning monarch was the celebrated Kublai Khan.

Marco Polo, with his father and uncle, commenced this journey towards the end of 1271, sailing from Venice to Acre in a Venetian vessel. These vessels, though small, were well built and skilfully manned by Venetian sailors. From Acre the travellers crossed Syria to Jerusalem, and then went northwards into the mountainous country of Armenia.

Passing near the celebrated Mount Ararat they journeyed down the Tigris Valley to the southern end of the Persian Gulf. Possibly they intended to take ship here and go to China by sea, but for some reason or other they continued their journey overland.

The following extract is Marco Polo's description of the district at the ocean end of the Persian Gulf. Perhaps it contains the reason why they did not go by sea to Cathay. See if you can find this reason.

1. At the extremity of the plain before mentioned as extending in a southern direction to the distance of five days' journey, there is a descent for about twenty miles, by a road that is extremely dangerous from the multitude of robbers, by whom travellers are continually assaulted and plundered. This declivity conducts you to another plain, very beautiful in its appearance, two days' journey in extent, which is called the plain of Ormus. Here you cross a number of fine streams, and see a country covered with date-palms, amongst which are found the partridge, birds of the parrot kind, and a variety of others unknown to our climate. At length you reach the border of the ocean, where, upon an island, at no great distance from the shore, stands a city named Ormus, whose port is frequented by traders from all parts of India, who bring spices and drugs, precious stones, pearls, gold tissues, elephants' teeth, and various other articles of merchandise. These they dispose of to a different set of traders, by whom they are dispersed throughout the world. During the summer season, the inhabitants do not remain in the city, on account of the excessive heat, which renders the air unwholesome, but retire to their gardens along the

shore or on the banks of the river, where with a kind of osier-work they construct huts over the water.

The vessels built at Ormus are of the worst kind, and dangerous for navigation, exposing the merchants and others who make use of them to great hazards. Their defects proceed from the circumstance of nails not being employed in the construction, the wood being of too hard a quality, and liable to split or crack like earthenware. When an attempt is made to drive a nail it rebounds, and is frequently broken. The planks are bored as carefully as possible with an iron augur near the extremities, and wooden pins being driven into them they are in this manner fastened to stem and stern. After this they are bound, or rather sewed together with a kind of rope-yarn stripped from the husks of the Indian (coco) nuts, which are of a large size and covered with a fibrous stuff like horsehair. This being steeped in water until the softer parts putrefy, the threads or strings remain clean, and of these they make twine for sewing the planks, which lasts long under water. Pitch is not used for preserving the bottoms of vessels, but they are smeared with an oil made from the fat of fish, and then caulked with oakum. The vessel has no more than one mast, one helm, and one deck. When she has taken in her lading it is covered over with hides, and upon these hides they place the horses which they carry to India. They have no iron anchors, but in their stead employ another kind of ground-tackle, the consequence of which is, that in bad weather (and these seas are very tempestuous), they are frequently driven on shore and lost.

The inhabitants of the place are of a dark colour and are Mahometans. They sow their wheat, rice, and

other grains in the month of November, and reap their harvest in March. The fruits also they gather in that month, with the exception of the dates, which are collected in May. Of these, with other ingredients, they make a good kind of wine. The food of the natives is different from ours. They live chiefly upon dates and salted fish. Excepting in marshy places, the soil of this country is not covered with grass, in consequence of the extreme heat which burns up everything.

Retracing their steps for some distance the travellers crossed Persia in a north-easterly direction, through the salt desert of Kerman, and then over the high Pamirs to Kashgar. If you follow their route on the map of Asia, you will find that it was by no means straight, for, of course, they had to travel from place to place where they could get food and guides. Travelling was slow, dangerous, and difficult. There were no good roads, in many places water was scarce, and robbers were always ready to attack the caravan.

After leaving Kashgar they crossed the well-known desert of Central Asia. In those days as in these, it took travellers thirty days to traverse this desert, their direction and rate being determined by the situation of the water pools. If they had ventured to leave this track, or if by misfortune they had lost it, they would have been almost certain to die of thirst in this inhospitable region. This is what Marco Polo tells us about this part of his journey.

2. Charchan is also a province of Turkestan. In former times it was flourishing and productive, but has been laid waste by the Tartars. Its chief city is likewise named Charchan. Through this province run several large streams, in which also are found chalcedonies and jaspers, which are carried for sale to Cathay, and such is their abundance that they form

a considerable article of commerce. The country, throughout its whole extent, is an entire sand, in which the water is for the most part bitter and unpalatable, although in particular places it is sweet and good. When an army of Tartars passes through these places, if they are enemies the inhabitants are plundered of their goods, and if friends their cattle are killed and devoured. For this reason, when they are aware of the approach of any body of troops, they flee, with their families and cattle, into the sandy desert, to the distance of two days' journey, towards some spot where they can find fresh water, and are by that means enabled to subsist. From the same apprehension, when they collect their harvest, they deposit the grain in caverns among the sands: taking monthly from the store so much as may be wanted for their consumption: nor can any person besides themselves know the places to which they resort for this purpose, because the tracks of their feet are presently effaced by the wind. Upon leaving Charchan the road lies for five days over sands, where the water is generally, but not in all places, bad. Nothing else occurs here that is worthy of remark. At the end of these five days you arrive at the city of Lop¹ on the borders of the great desert.

Travellers who intend to cross the desert usually halt for a considerable time at this place, as well to repose from their fatigues as to make the necessary preparations for their further journey. For this purpose they load a number of stout asses and camels with provisions and with their merchandise. Should the former be consumed before they have completed the passage, they kill and eat the cattle of both kinds; but camels are commonly here employed in preference to asses,

¹ Near Lob Nor.

because they carry heavy burdens and are fed with a small quantity of provender. The stock of provisions should be laid in for a month, that time being required for crossing the desert in its narrowest part. To travel it in the direction of its length would prove a vain attempt, as little less than a year must be consumed, and to convey stores for such a period would be found impracticable. During these thirty days the journey is invariably over either sandy plains or barren mountains: but at the end of each day's march you stop at a place where water is procurable: not indeed in sufficient quantity for large numbers, but enough to supply a hundred persons, together with their beasts of burden. At three or four of these halting-places the water is salt and bitter, but at the others, amounting to about twenty, it is sweet and good. In this tract neither beasts nor birds are met with, because there is no kind of food for them.

The Polos probably were travelling with a company of merchants who knew the route well, for they crossed this central part of Asia safely, and at the end of nearly three years after they started from Venice they reached Cathay, and proceeded straight to the court of the great Kublai Khan. They were well received by this monarch, who seems to have been particularly pleased by the appearance and manners of the youthful Marco, for we find that shortly after their arrival at the royal court, Marco was engaged in work given to him by the king. In carrying out this work he had occasion to travel to various parts of the kingdom of Cathay. He must have been a very keen, observant youth, as can be gathered from what he tells us of the countries and cities he visited, the people, their occupations and customs, their beliefs and religion, the crops that were grown, the means of travelling from place to place, and the

many wonderful things he saw and heard in the different places he visited. Here is Marco Polo's description of one of the great cities in Cathay, the city of Kinsai. This city is probably the town that is now called Hang-chou. The Chinese have many strange customs. One is that occasionally they have altered the names of their towns, and this makes it difficult to know always which town Marco Polo is describing. You will find Hang-chou marked on your maps, not very far from the mouth of the great River Yang-tse-kiang. This is what he tells us.

3. Upon leaving Va-giu¹ you pass, in the course of three days' journey, many towns, castles and villages, all of them well inhabited and opulent. The people are idolaters, and subjects of the grand Khan, and they use paper money and have abundance of provisions. At the end of three days you reach the noble and magnificent city of Kinsai, a name that signifies "the celestial city," and which it merits from its pre-eminence to all other cities in the world, in point of grandeur and beauty, as well as from its abundant delights, which might lead an inhabitant to imagine himself in Paradise. Its streets and canals are extensive, and there are squares or market-places, which being necessarily proportioned in size to the prodigious concourse of people by whom they are frequented, are exceedingly spacious. It is situated between a lake of fresh and very clear water on the one side, and a river of great magnitude on the other, the waters of which, by a number of canals, large and small, are made to run through every quarter of the city, carrying with them all the filth into the lake and ultimately into the sea. This, whilst it contributes much to the purity

¹ On Lake Tai.

of the air, furnishes a communication by water, in addition to that by land, to all parts of the town; the canals and the streets being of sufficient width to allow of boats on the one, and carriages in the other, conveniently passing, with articles necessary for the consumption of the inhabitants. The bridges which are thrown over the principal canals and are connected with the main streets, have arches so high, and built with so much skill, that vessels with their masts can pass under them, whilst, at the same time, carts and horses are passing over their heads—so well is the slope from the streets adapted to the height of the arch. If they were not in fact so numerous, there would be no convenience of crossing from one place to another.

There are within the city ten principal squares or market-places, besides innumerable shops along the streets. In a direction parallel to that of the main street, but on the opposite side of the squares, runs a very large canal, on the nearer bank of which capacious warehouses are built of stone, for the accommodation of merchants who arrive from India and other parts, together with their goods and effects, in order that they may be conveniently situated with respect to the market-places. In each of these, upon three days in every week, there is a great assemblage of persons, who attend the markets and supply them with every article of provision that can be desired. There is an abundant quantity of game of all kinds, such as roebucks, stags, fallow deer, hares and rabbits, together with partridges, pheasants, quails, common fowls, and such numbers of ducks and geese as can scarcely be expressed: for so easily are they bred and reared on the lake, that, for the value of a Venetian silver groat, you

may purchase a couple of geese or two couple of ducks. At all seasons there is in the markets a great variety of herbs and fruits, and especially pears of an extraordinary size. There are peaches also in their season of a delicious flavour. Grapes are not produced there, but are brought in a dried state, and very good, from other parts. This applies also to wine, which the natives do not hold in estimation, being accustomed to their own liquor prepared from rice and spices. From the sea, which is fifteen miles distant, there is daily brought up the river, to the city, a vast quantity of fish: and in the lake also there is abundance, which gives employment at all times to persons, whose sole occupation it is to catch them.

Each of the ten market-squares is surrounded with high dwelling-houses, in the lower parts of which are shops, where every kind of manufacture is carried on, and every article of trade is sold: such, amongst others, as spices, drugs, trinkets and pearls.

The inhabitants of the city are idolaters, and they use paper money as currency. The men, as well as the women, have fair complexions and are handsome. The greater part of them are always clothed in silk, in consequence of the vast quantity of that material produced in the territory of Kin-sai, exclusively of what the merchants import from other provinces. The costliness of their dresses in silk and jewellery can scarcely be imagined. Their houses are well built and richly adorned with carved wood. So much do they delight in ornaments of this kind, in paintings and fancy buildings, that the sums they lavish on such objects are enormous. In every street of this city there are stone buildings or towers, to which, in case of a fire

breaking out in any quarter (an accident by no means unusual, as the houses are mostly constructed of wood), the inhabitants may remove their effects for security. There is a guard of ten watchmen stationed upon all the principal bridges, of whom five do duty by day and five by night. Each of these guardrooms is provided with a sonorous wooden instrument, together with a water-clock, by means of which latter the hours of the day and night are ascertained. As soon as the first hour of the night has expired, one of the watchmen gives a single stroke upon the wooden instrument, which announces to the people on the neighbouring streets that it is the first hour. The guard is not allowed to sleep, and must be always on the alert.

The Polos stayed in China for several years, and although they frequently wished to return to Europe, no favourable opportunity presented itself until about the year 1291. At this time the great Khan wished to send a princess to Persia, and as the journey overland was too dangerous and difficult for a princess, it was decided that she should go by the sea route. Now the Venetian merchants were skilful sailors, and Kublai Khan thought that she would be safe in their charge. So when all was ready, quite a large fleet of ships set out from China to Persia bearing the princess, her servants, her dowry, and many valuable presents for the Persian king. The journey was long and tedious, and not without its dangers from storms and pirates, but the ships reached Persia safely, and the princess was married to the Persian prince. The Polos now continued their journey to Europe by a route which led them up the Tigris Valley, through Armenia, and so to the Black Sea. Here they took ship and finally reached Venice in 1295.

It is not surprising that their friends did not know them

on their return, for they had been away from home about twenty-four years, and we must remember that probably no letters had been sent during all that time. Their friends at Venice must have given up hope of ever seeing them again, and Marco Polo and his father had difficulty in making people recognise who they were. It is said that it was only when the returned travellers showed what great wealth they had in precious stones that their relatives really believed them.

Some time after their return a war broke out between the Venetians and the Genoese, who were also merchants. Marco Polo was in charge of one of the Venetian ships, and in one of the battles his ship was sunk, and he was taken prisoner. He was put into prison, awaiting ransom, and while there he spent his time in relating the record of his journeyings to a fellow-prisoner who could write. This record has been preserved, and forms a most interesting and valuable book, because it tells us so much about the continent of Asia at the time when Marco Polo visited it. Not only has he told us about the things he actually saw on his journeys, but he gathered together much information concerning those parts he did not actually visit. The extracts already given in this chapter are taken from that book, and you will read others at the end of the chapter. As we read them let us remember that they were written by this Venetian traveller over six hundred years ago, but much that he wrote is true for parts of Asia even to-day, for things have changed only slowly in this vast continent. If we compare North America to-day with what it was six hundred years ago, we shall find that many things have changed considerably in the interval. You will be able to do this after you have read a later chapter.

We shall find that Marco Polo was not like many of the other travellers of whom we shall read in this book, for they set out on their journeys having a definite aim in view.

They often went with the object of finding new routes to

old lands, but Marco Polo simply went because his father was a merchant who traded with the east, and he took his son with him on this long journey. But the knowledge Marco Polo gained and gave to the world was so valuable that we must include him among the great men who by their work have enabled others to learn much and to profit in many ways by their knowledge of distant lands.

DESCRIPTION OF THE PEOPLE WHO LIVED IN CENTRAL ASIA

4. Now that I have begun speaking of the Tartars, I will tell you more about them. The Tartars never remain fixed, but as the winter approaches remove to the plains of a warmer region, in order to find sufficient pasture for their cattle; and in summer they frequent cold situations in the mountains, where there is water and verdure, and their cattle are free from the annoyance of horse-flies and other biting insects. During two or three months they progressively ascend higher ground and seek fresh pasture, the grass not being adequate in any one place to feed the multitudes of which their herds and flocks consist.

Their huts or tents are formed of rods covered with felt, and being exactly round, and nicely put together, they can gather them into one bundle, and make them up as packages, which they carry along with them in their migrations, upon a sort of car with four wheels. When they have occasion to set them up again, they always make the entrance front to the south. Besides these cars they have a superior kind of vehicle upon two wheels, covered likewise with black felt, and so effectually as to protect those within it from wet, during

a whole day of rain. These are drawn by oxen and camels, and serve to convey their wives and children, their utensils, and such provisions as they require. The women it is who attend to their trading concerns, who buy and sell, and provide everything necessary for their husbands and their families: the time of the men being entirely devoted to hunting and hawking and matters that relate to their military life. They have the best falcons in the world, and also the best dogs. They subsist entirely upon flesh and milk, eating the produce of their sport, and a certain small animal, not unlike a rabbit, called by our people Pharaoh's mice, which during the summer season are found in great abundance in the plains. But they likewise eat flesh of every description, horses, camels, and even dogs provided they are fat. They drink mares' milk, which they flavour in such a manner that it has the qualities and flavour of white wine.

DESCRIPTION OF THE PEOPLE WHO LIVED IN NORTHERN ASIA

5. It should be known, therefore, that in the northern parts of the world there dwell many Tartars. They have no corn of any kind, but subsist upon flesh and milk. They possess vast herds of horses, cows, sheep and other domestic animals. In these northern districts are found bears of a white colour, and of prodigious size, being for the most part about twenty spans in length. There are foxes also, whose furs are entirely black, wild asses in great numbers, and certain small animals, which have most delicate furs, and by our people are called sable.

In order to reach the country inhabited by these people, it is necessary to perform a journey of fourteen days across a wide plain, entirely uninhabited and desert—a state that is occasioned by innumerable collections of water and springs that render it an entire marsh. This, in consequence of the long duration of the cold season, is frozen over, excepting for a few months of the year, when the sun dissolves the ice, and turns the soil to mud, over which it is more difficult and fatiguing to travel than when the whole is frozen. For the purpose, however, of enabling the merchants to frequent their country, and purchase their furs, in which all their trade consists, these people have exerted themselves to render the marshy desert passable for travellers, by erecting at the end of each day's stage a wooden house, raised some height above the ground, where persons are stationed, whose business it is to receive and accommodate the merchants, and on the following day to conduct them to the next station of this kind: and thus they proceed from stage to stage, until they have effected the passage of the desert. In order to travel over the frozen surface of the ground, they construct a sort of vehicle, not unlike that made use of by the natives of the steep and almost inaccessible mountains in the vicinity of our own country, and which is termed a sledge. It is without wheels, is flat at bottom, but rises with a semicircular curve in front, by which construction it is fitted for running easily upon the ice. For drawing these small carriages they keep in readiness certain animals resembling dogs, and which may be called such, although they approach to the size of asses. They are very strong and inured to the draught. Six of them, in couples, are harnessed to

each carriage, which contains only the driver who manages the dogs, and one merchant, with his package of goods. When the day's journey has been performed he quits it, together with that set of dogs, and thus changing both from day to day, he at length accomplishes his journey across the desert, and afterwards carries with him (in his return) the furs that find their way, for sale, to our part of the world.

Beyond the most distant part of the territory of those Tartars from whence the skins that have been spoken of are procured, there is another region which extends to the utmost bounds of the north, and is called the Region of Darkness, because during most part of the winter months the sun is invisible, and the atmosphere is obscured to the same degree as that in which we find it just about the dawn of day, when we may be said to see and not to see. The men of this country are well made and tall, but of a very pallid complexion. The inhabitants of this region take advantage of the summer season, when they enjoy continual daylight to catch vast multitudes of ermines, martens, foxes and other animals of that kind, the furs of which are more delicate and consequently more valuable, than those found in the districts inhabited by the other Tartars. During the summer, also, these people carry their furs to the neighbouring countries, where they dispose of them in a manner highly advantageous, and according to what I have been told, some of them are transported even as far as to the country of Russia.

DESCRIPTION OF OTHER CITIES IN CATHAY

6. Leaving the city of Sa-yan-fu,¹ and proceeding fifteen days' journey towards the south-east, you reach the city of Sin-gui,² which, although not large, is a place of great commerce. The number of vessels that belong to it is prodigious, in consequence of its being situated near the Kiang, which is the largest river in the world, its width being in some places ten, in others eight, and in others six miles. Its length, to the place where it discharges itself into the sea, is upwards of one hundred days' journey. It is indebted for its great size to the vast number of other navigable rivers that empty their waters into it, which have their sources in distant countries. A great number of cities and large towns are situated upon its banks, and more than two hundred, with sixteen provinces, partake of the advantages of its navigation, by which the transport of merchandise is to an extent that might appear incredible to those who have not had an opportunity of witnessing it. When we consider, indeed, the length of its course, and the multitude of rivers that communicate with it (as has been observed) it is not surprising that the quantity and value of articles for the supply of so many places, lying in all directions, should be incalculable. The principal commodity, however, is salt, which is not only conveyed by means of the Kiang, and the rivers connected with it, to the towns upon their banks, but afterwards from thence to all places in the interior of the country. On one occasion I saw not fewer than fifteen thousand vessels. All these vessels are covered

¹ The modern Siang-yang on the Han River.

² The modern Kiu-kiang.

with a kind of deck, and have a mast with one sail. Their burthen is in general about four thousand cantari,¹ or quintals, of Venice, and from that upwards to twelve thousand cantari, which some of them are capable of loading. They do not employ hempen cordage, excepting for their masts and sails. They have canes of the length of fifteen paces, which they split in their whole length into very thin pieces, and these by twisting them together, they form into ropes, three hundred paces long. So skilfully are they manufactured, that they are equal in strength to cordage made of hemp. With these ropes the vessels are towed along the rivers, by means of ten or twelve horses to each, as well upwards, against the current, as in the opposite direction. At many places near the banks of this river there are hills and small rocky eminences, upon which are erected idol temples and other edifices, and you find a continual succession of villages and inhabited places.

7. To this city (Kanbalu)² everything that is most rare and valuable in all parts of the world finds its way: and more especially does this apply to India, which furnishes precious stones, pearls, and various drugs and spices. From the provinces of Cathay itself, as well as from the other provinces of the empire, whatever there is of value is carried thither, to supply the demands of those multitudes who are induced to establish their residence in the vicinity of the court. The quantity of merchandise sold there exceeds also the traffic of any other place: for no fewer than a thousand carriages and pack-horses, loaded with raw silk, make their daily entry: and gold tissues and silks of various kinds are manufactured to an immense extent. In the vicinity of

¹ 100 lbs. weight.

² Pekin.

the capital are many walled and other towns, whose inhabitants live chiefly by the court, selling the articles which they produce in the markets of the former, and procuring from thence in return such as their own occasions require. In this city is the mint of the grand Khan, who may truly be said to possess the secret of the alchemists, as he has the art of producing money from the following process. He causes the bark to be stripped from those mulberry-trees, the leaves of which are used for feeding silk-worms, and takes from it that thin inner rind which lies between the coarser bark and the wood of the tree. This being steeped, and afterwards pounded in a mortar, until reduced to a pulp, is made into paper, resembling (in substance) that which is manufactured from cotton, but quite black. When ready for use, he has it cut into pieces of money of different sizes, nearly square, but somewhat longer than they are wide.

THE BLACK STONES OF NORTHERN CHINA

8. Throughout the province there is found a sort of black stone, which they dig out of the mountains, where it runs in veins. When lighted it burns like charcoal, and retains the fire much better than wood: insomuch that it may be preserved during the night, and in the morning be found still burning. These stones do not flame, excepting a little when first lighted but during their ignition give out a considerable heat. It is true there is no scarcity of wood in the country, but the multitude of inhabitants is so immense, and their stoves and baths, which they are continually heating, so numerous, that the quantity could not supply the

demand: for there is no person who does not frequent the warm bath at least three times in the week; and during the winter daily, if it is in their power. Every man of rank or wealth has one in his house for his own use: and the stock of wood must soon prove inadequate to such consumption: whereas these stones may be had in the greatest abundance, and at a cheap rate.

EXERCISES

6. Read carefully Marco Polo's description of the city of Kinsai. What was there in that city that would remind him of his native city, Venice?

7. With what countries did China (Cathay) trade? What articles were exchanged? Which of these articles, do you think, would find a ready sale in Europe?

8. Why was Marco Polo so interested in the boats that he saw used in different parts of Asia?

9. After you have read carefully what Marco Polo says about the different parts of Asia, answer the following:

(a) In what part of Asia did the Tartars dwell?

(b) What was the chief food of the people who lived near the Persian Gulf, and the chief food of the Tartars? Why were they different?

(c) Write down as many differences as you can find between the kingdom of Cathay and the central parts of Asia.

10. Study the map of Asia in your atlas, and write down the names of the countries through which Marco Polo passed, and also the countries he would pass in his sea-voyage on his return.

11. On a blank map of Asia mark the route followed by Marco Polo. On this map put a few words about each of

the districts described in the extracts. Compare this map with the map in your atlas, and mark in the chief mountain ranges.

12. For what article of trade mentioned by Marco Polo is China famous to-day as it was then?

13. To what is Marco Polo referring in the extract No. 8? Do you know if China possesses many of these black stones?

CHAPTER III

CHRISTOPHER COLUMBUS—AN ITALIAN

EVERYBODY has heard of Columbus, and at least knows that he discovered the lands that are now called America. He was born in Genoa about the middle of the fifteenth century. We do not know for certain very much about his young days, as his parents were probably only simple, ordinary folk, and so no particular attention was given to their children. If you had known him as a boy playing in the streets of Genoa, you would have called him *Cristofero Columbo*; it was only after he had made a name for himself that people began to call him by the name by which we know him—*Christopher Columbus*.

At the time when he was a boy, Genoa was an important port like Venice. Ships sailed from Genoa to all parts of the Mediterranean Sea, and also along the west coast of Europe, exchanging all kinds of goods between the countries visited. In one of the narrow streets of Genoa, not far from the quay-side, there is a house, with a stone tablet on the wall above the door, saying that in this house Columbus was born; and so we can imagine that as a boy he often found his way down to the ships, and listened to the stories told by the sailors of their exploits on the sea, and of the strange sights they had seen in foreign lands. When he became a youth, he, too, went to sea, and became a very skilful seaman. He did not idle away his time, but set himself the task of learning all he could about ships and how to sail them, about

the seas which he crossed, and how to navigate them, and about the cities and countries he visited. As a matter of fact he became a very skilful navigator, and very learned in all that related to ships and geography. He and his brother went to live at Lisbon, because this city was one of the most important centres for navigation in those days. Columbus knew about the rich countries in the east of Asia that had been visited by Marco Polo, and thought, that if only he could reach these lands by an easier route than that followed by Polo across Asia, he would become famous, and probably wealthy. He knew, from his reading, that the ancient Greeks had believed the earth was round, although no one had sailed round it, but this idea was not accepted by people who lived at that time. In fact, most people believed that the earth was flat, and if one sailed far enough across the ocean he would come to the edge. Columbus, however, gradually formed the opinion that the Greeks were right, and that if he sailed out westwards across the Atlantic Ocean (called in those days the Sea of Darkness) he would reach the eastern lands of Asia.

It is too long a story to tell how Columbus was laughed and sneered at by the people to whom he told his ideas when he tried to obtain their help. But we should remember that for seven years he tried and tried again, to get someone to help him in his undertaking, and at last the King and Queen of Spain agreed to grant him permission to sail in Spanish ships. These seven years of waiting and ridicule disclose to us other traits in the character of Columbus; they show us that he was patient and persevering, that when he had set his mind on obtaining anything he would let nothing, that he could help, prevent him from attaining his object.

Thus in August, 1492, we find that he was ready to start on his great journey. The monarchs of Spain had ordered the small port of Palos to provide three ships and crews to

sail under the command of Columbus in his search for the east. The ships were very small compared with the ocean liners of to-day, and, of course, were entirely dependent on the winds for progress. The ships were called the *Santa Maria*, the *Nina*, and the *Pinta*. They were not what would be called seaworthy craft by sailors of the present day, and the majority of the crews were untrustworthy, and proved in later days to be cowardly. All the people of Palos turned out to see the departure of the ships, and thought that such reckless adventurers would never be seen in Spain again. Columbus sailed southwards to the Canaries, and having repaired his ships and taken on board provisions and water, away he sailed westwards into the great unknown sea. For a few hours all went well. The wind was favourable, and the boats sped along with all sails set. As soon as the land was out of sight, however, troubles arose, for many of the sailors became frightened, and asked Columbus to take them back. As day by day passed these cowardly sailors influenced their mates, and Columbus had the greatest difficulty in suppressing mutiny. At times he laughed at their fears, sometimes he argued with them and pointed out what wealth would be theirs when they reached the East, and sometimes he grew angry with them and threatened to put them in chains. Day after day passed and nothing was seen but sea and sky. The winds were always favourable, and carried the boats along at a rapid rate, and the sailors knew that they were getting farther and farther from Spain, and with the winds always behind them, it would be more and more difficult to return if ever Columbus decided to turn again. The sailors were constantly on the look-out for any signs of land, and when a bough of a tree was seen floating on the water, great excitement prevailed, and they expected land would soon be in sight.

Let us think of Columbus himself, for a minute, during these trying days. He had practically no one in whom to



FIG. 3.—THE WORLD AS MAPPED IN 1492.

This map is taken from a globe made by Martin Behaim in 1492. A few names have been put in to help you. You should compare it with Fig. 1 on p. 11. Notice that America is not shown, because it was only in this same year, 1492, that Columbus crossed the Atlantic. You should specially notice how broad the land mass from Western Europe to Japan is made. Columbus had the same idea as this map shows, namely, that it was not very far across the Atlantic to the islands off the coast of Cathay. Compare this with Fig. 4 on p. 85, on which the breadth of Europe and Asia is more accurately shown.

confide. His work of years was being put to the test. All his skill in navigation, his powers of controlling mutinous men, his patience and courage, were being tried to the fullest extent.

One Thursday evening just over thirty days after they started, the sun had set, the stars were shining brilliantly, and Columbus was standing alone on the poop gazing westwards. He saw in the distance what he thought was a light moving up and down, and having called the attention of one of his most reliable men to it, they decided that they must be near land. The sails were furled and the boats brought to, and when daylight came they saw a few miles away a beautiful island. Thus Columbus crossed the Atlantic and believed that the islands in front of him belonged to the east coast of Asia. Little did he dream of the New World of America that he had really reached: his thoughts were centred on Cathay, and to the last day of his life he never knew his great mistake. He remained cruising among these islands for a few months, and early in 1493 he returned to Spain. The following extract taken from a letter written by Columbus to the Spanish Treasurer will give you in his own words a description of these islands he discovered:

1. Thirty-three days after my departure from Cadiz I reached the Indian sea, where I discovered many islands, thickly peopled, of which I took possession without resistance in the name of our most illustrious monarch, by public proclamation and with unfurled banners. To the first of these islands, which is called by the Indians Guanahani, I gave the name of the blessed Saviour (San Salvador),¹ relying upon whose protection I had reached this as well as the other islands: to each of these I also gave a name, ordering that one should be called Santa Maria, another

¹ Watling Island.

Fernandina, the third Isabella, the fourth Juana,¹ and so with all the rest respectively. As soon as we arrived at that, which as I have said was named Juana, I proceeded along its coast a short distance westward, and found it to be so large and apparently without termination, that I could not suppose it to be an island, but the continental province of Cathay. Seeing, however, no towns or populous places on the sea-coast, but only a few detached houses and cottages, with whose inhabitants I was unable to communicate, because they fled as soon as they saw us, I went farther on, thinking that in my progress I should certainly find some great city. At length, after proceeding a great way and finding that nothing new presented itself, I resolved not to attempt any farther progress. I dispatched two of our men to ascertain whether there were a king or any cities in that province. These men reconnoitred the country for three days, and found a most numerous population, and great numbers of houses, though small, and built without any regard to order: with which information they returned to us. In the meantime I had learned from some Indians whom I had seized, that that country was certainly an island. This said island of Juana is exceedingly fertile, as indeed are all the others.

All these islands are very beautiful, and distinguished by a diversity of scenery: they are filled with a great variety of trees of immense height, and which I believe to retain their foliage in all seasons: for when I saw them they were as verdant and luxuriant as they usually are in Spain in the month of May—some of them were blossoming, some bearing fruit, and all flourishing in

¹ Juana is Cuba; the others are small islands near to Cuba.

the greatest perfection: yet the islands are not so thickly wooded as to be impassable. The nightingales and various birds were singing in countless numbers, and that in November, the month on which I arrived there. There are besides in the same island of Juana, seven or eight kinds of palm trees, which like all the other trees, herbs, and fruits considerably surpass ours in height and beauty. The pines also are very handsome, and there are very extensive fields and meadows, a variety of birds, different kinds of honey, and many sorts of metals, but no iron.

The inhabitants are naturally timid and fearful. This timidity did not arise from any loss or injury that they had received from us: for, on the contrary, I gave to all I approached whatever articles I had about me, such as cloth and many other things, taking none of theirs in return. As soon however as they see that they are safe, and have laid aside all fear, they are very simple and honest, and exceedingly liberal with all they have: none of them refusing any thing he may possess when he is asked for it, but on the contrary inviting us to ask them. They also gave objects of great value for trifles, and content themselves with very little or nothing in return. I however forbade that these trifles and articles of no value [such as pieces of dishes, plates and glass, keys and leather straps] should be given to them, although if they could obtain them, they imagined themselves to be possessed of the most beautiful trinkets in the world. Thus they bartered, like idiots, cotton and gold for fragments of bows, glasses, bottles and jars.

Each of these islands has a great number of canoes, built of solid wood, narrow, and not unlike double-banked boats in length and shape, but swifter in their

motion: they steer them only by the oar. These canoes are of various sizes and some I saw held as many as seventy-eight rowers.

If you can find marked on a map the route by which Columbus crossed the Atlantic, you will see that his return journey eastwards was made in latitudes farther north than the outward journey. From what has already been said, perhaps, you will know why he returned by a different route, but in any case you will find out when you have worked some of the exercises at the end of the book.

There were great rejoicings in Spain on the arrival of Columbus, and he had no difficulty in fitting out a second expedition towards the end of 1493. He crossed and recrossed the Atlantic four times, and each time, like the true explorer he was, he chose a different route. The next extract is taken from his third voyage. Read it very carefully because it contains some valuable geography lessons.

2. I started from San Lucar on the 30th of May. I sailed to the island of Madeira by a circuitous route. Thence I went to the Canaries, from which islands I sailed with but one ship and two caravels, having dispatched the other ships to *Española*¹ by the direct road to the Indies: while I myself moved southward, with the view of reaching the equinoctial line, and of then proceeding westward, so as to leave the island of *Española* to the north. But having reached the Cape Verde Islands (an incorrect name, for they are so barren that nothing green was to be seen there, and the people so sickly that I did not venture to remain among them), I sailed away four hundred and eighty miles, which is equivalent to a hundred and twenty leagues, towards the south-

¹ Haiti or San Domingo.

west, where, when it grew dark, I found the north star to be in the fifth degree. The wind then failed me, and I entered a climate where the intensity of the heat was such, that I thought both ships and men would have been burnt up, and everything got into such a state of confusion, that no man dared go below deck to attend to the securing of the water-cask and the provisions. This heat lasted eight days: on the first day the weather was fine, but on the seven other days it rained and was cloudy, yet we found no alleviation of our distress: so that I certainly believe, that if the sun had shone as on the first day, we should not have been able to escape in any way. At the end of these eight days it pleased our Lord to give me a favourable east wind, and I steered to the west, but did not venture to move lower down towards the south, because I discovered a very great change in the sky and the stars, although I found no alteration in the temperature. I resolved, therefore, to keep on the direct westward course, in a line from Sierra Leone, and not to change it until the chance offered of more speedily reaching land on another tack, which I was very desirous to do, for the purpose of repairing the vessels, and of renewing, if possible, our stock of provisions, and taking in what water we wanted. At the end of seventeen days, during which our Lord gave me a propitious wind, we saw land at noon of Tuesday, the 31st of July, when one of the sailors went up to the main-top, and saw to the westward a range of three mountains. I put in for the land, and gave to the island the name of Trinidad, and here we found a harbour, which would have been excellent but that there was no good anchorage. We saw houses and people on the spot, and the country around was

very beautiful and as fresh and green as the gardens of Valencia in the month of March.

In 1506 Columbus died, almost a beggar, in an empty room in Valladolid in Spain. He was born of poor parents and died a poor man, but he has left a name that will be for ever famous as that of a great navigator and explorer. He set out with many objects in view. He wished to reach the east by sailing to the west, and thus to gain the riches of Cathay; he thought to prove the world round and thus gain fame. He died without having accomplished any of the things he set out to do, and yet really he had done something much greater, for he had shown that the Sea of Darkness could be safely crossed, that by the help of the stars and the compass a sailor could find his way about the ocean out of sight of land, and thus he opened up the way for all future navigators.

EXERCISES

14. Many of the early navigators made longer voyages than Columbus did. Why was Columbus's voyage so important?

15. On a blank map of the Atlantic Ocean trace Columbus's first and third voyage to the Indies. Suggest any reason why these were different. Did he experience anything different on the third voyage from what he did on the first?

16. Why are the islands between North and South America called the West Indies? Give as full an answer as you can to this question.

17. Columbus compares the appearance of the forests (see extract No. 1) in the West Indies to the trees in Spain as seen in May. Is there any reason why he should choose the month of May? What does he say about the vegetation of Trinidad in extract No. 2?

18. In what ways were the forest trees seen by Columbus in the West Indies different from the forest trees in England? Can you suggest any reasons why they should be so different?

19. What additions to geographical knowledge did Columbus make by his famous voyages?

20. Write a short story of Columbus showing why, although he was an Italian, he sailed in a Spanish ship across the Atlantic.

CHAPTER IV

FERDINAND MAGELLAN—A PORTUGUESE

THE name of Ferdinand Magellan will be remembered so long as the stories of the early explorers of the seas are told. He was a Portuguese by birth, and was born about the year 1480. His parents were people in a good position, and as a boy he acted as a page to the Queen of Portugal.

At this time the Portuguese were famous as a sea-faring people. During the greater part of the fifteenth century they had sent many expeditions sailing southwards along the west coast of Africa, searching for a sea route to India. We must remember that at this time people did not know how far to the south Africa extended, or whether it was possible to sail round it and so to reach the Indian seas.

To us, of course, this all seems very simple, but in those days it was all shrouded in mystery, and so one of the King of Portugal's sons, known as Prince Henry the Navigator, set out to solve the problem, if possible. To do this he gathered around him the most learned and skilful navigators of the day, and they instructed the Portuguese both in the art of ship-building and in navigation.

Time after time these Portuguese vessels sailed away southwards, hugging the coast in order to see if the land ended, and also in order to find their way back; and time after time they returned with the same account that a passage to the east could not be found. Then after many vain attempts, in the year 1487, one of these voyagers, whose

name was Bartholomew Diaz, found the route round what we call the Cape of Good Hope, and there were great rejoicings. Prince Henry had died over twenty years previously, and thus never knew that his scheme was finally successful.

In the previous chapter we have read how Columbus had sailed westwards across the Atlantic Ocean and thought that he had found the Indies for Spain. Portugal had been trying for about sixty years to reach India by sea, and now it was thought that Spain in less than six months had reached the goal that Portugal had failed to reach during all these years. So it is not surprising to find that in 1497 Portugal fitted out another expedition and put it under the command of Vasco da Gama, who crowned all the previous attempts with success, by sailing round the Cape of Good Hope and reaching the west coast of India. This meant, of course, that the valuable silks and tapestries, carvings, spices, medicines, and other expensive articles that came from the East, and had reached Europe in Venetian ships, would now be brought in Portuguese vessels. For many years the merchants had experienced greater and greater difficulty in bringing these things overland owing to the frequent attacks by robbers and from other causes, so that a route entirely over the sea would be better, because free from these dangers.

Having reached India the Portuguese sailed still farther eastwards and came to the East Indian Islands, from which great quantities of such things as cinnamon and nutmegs had been brought to Europe.

In those days such spices were great luxuries, and the merchants who brought them could sell them in Europe for almost their weight in silver. Thus it came about that in the early years of the sixteenth century Portugal was one of the richest countries in Europe, and one in which the art of ship-building and of learning how to navigate the ocean, had been brought to a high state of perfection.

Under these circumstances it is not surprising to find that many of the young nobles of Portugal went to the East Indies because it afforded them adventure, excitement, and probably great wealth.

During his boyhood Magellan loved to hear of ships and foreign lands, and we find that when he was old enough he, like many others, sailed away to India and the East. But he was different from many of the others in so far that he gave all his attention to learn how to sail a ship and how to manage the crew, with the result that he became a very clever navigator.

For some reason into which it is not necessary for us to inquire, he quarrelled with the King of Portugal, and as he thought he had been treated unjustly by that monarch, he left Portugal and went to live in Spain.

It was known by this time that Columbus had not reached the east by sailing to the west, but that he had discovered the New World for Spain. The Spaniards had gained much treasure in the form of silver and gold from these new lands, but she was jealous of her neighbour's success and wealth. And so Magellan asked the King of Spain to fit out an expedition and put him in command, to go out again to the west and seek a route to the east. He used many arguments, and at length, when the king was satisfied with Magellan's ability and determination to make the voyage a success, the request was granted. Thus it came about that, in 1519, Magellan, a Portuguese, sailed in charge of a Spanish fleet of five ships, with the direct object of sailing right round the world. He knew he was undertaking a big task, but it proved even bigger than he thought. He had better ships and more experienced sailors than Columbus had, but many of the crew did not like having a Portuguese as their commander. The voyage commenced in September, 1519, and the ships sailed away to the Cape Verde Islands. Leaving these islands they crossed the Atlantic Ocean in a south-

westerly direction to the east coast of South America. This part of the voyage is described in the following extract, taken from an account written by an Italian who accompanied Magellan, and whose duty it was to keep a record of whatever occurred each day during the voyage :

I. We passed the Cape Verde and the neighbouring islands in fourteen and a half degrees, and we navigated for several days by the coast of Guinea : where there is a mountain called Sierra Leone, which is in eight degrees latitude. Sometimes we had the wind contrary and at other times sufficiently good, and rains without wind.

In this manner we navigated with rain for the space of sixty days until we had crossed the equinoctial line, which was a thing very strange and unaccustomed to be seen, according to the saying of some old men and those who had navigated here several times.

In order that our ships might not perish, we struck our sails, and in that manner we went about the sea, hither and thither, until the fair weather came. During the calm there came large fishes near the ships which they called sharks, which have teeth of a terrible kind, and eat people when they find them in the sea either alive or dead. These fishes are caught with a device which the mariners call hame, which is a hook of iron. Of these some were caught by our men. However, they are worth nothing to eat when they are large : and even the small ones are worth but little.

During these storms the body of St. Anselm appeared to us several times : amongst others, one night that it was very dark on account of the bad weather, the said saint appeared in the form of a fire lighted at the

summit of the mainmast, and remained there near two hours and a half, which comforted us greatly, for we were in tears, only expecting the hour of perishing: and when that holy light was going away from us it gave out so great a brilliancy in the eyes of each, that we were near a quarter-of-an-hour like people blinded, and calling out for mercy. For without any doubt, nobody hoped to escape from that storm.

It is to be noted that all and as many times as that light which represents the said St. Anselm shows itself and descends upon a vessel which is in a storm at sea, that vessel never is lost. Immediately that this light had departed the sea grew calmer, and then we saw divers sorts of birds.

When the east coast of South America was reached, a careful search was made for a sea passage that would lead them still farther to the west. If you follow them in their journey with the aid of your atlas, you will see that although there are broad river mouths, no sea passage occurs until you reach what are now called the Straits of Magellan. It was not until thirteen months had passed since they left Spain, that these straits were reached, and the following account taken from the same book as the previous extract is the first description of these straits that was ever written:

2. After going and taking the course to the 52 degree of the said Antarctic sky, on the day of the Eleven Thousand Virgins (Oct. 21st) we found by a miracle, a strait which we called the Cape of the Eleven Thousand Virgins.¹ This strait is a hundred and ten leagues long, which are four hundred and forty miles, and almost as wide as less than half a league, and it

¹ Cape Virgins.

issues in another sea, which is called the peaceful sea; it is surrounded by very great and high mountains covered with snow. In this place it was not possible to anchor with the anchors, because no bottom was found, on which account they were forced to put the moorings of twenty-five or thirty fathoms length on shore. This strait was a round place surrounded by mountains, as I have said, and the greater number of the sailors thought that there was no place by which to go out thence into the peaceful sea. The captain sent on before two of his ships, one named *St. Anthony* and the other the *Conception*, to seek for and discover the outlet of this strait. And we, with the other two ships, that is to say, the flagship named *Trinidad*, and the other the *Victory* remained waiting for them within the Bay, where in the night we had a great storm, which lasted till the next day at midday, and during which we were forced to weigh the anchors, and let the ships go hither and thither about the bay. The other two ships met with such a head wind that they could not weather a cape which the bay made almost at its extremity: But, on approaching the extremity of the bay, and whilst expecting to be lost, they saw a small mouth, which did not resemble a mouth but a corner, and (like people giving up hope) they threw themselves into it, so that by force they discovered the strait. Seeing that it was not a corner, they went further on and found a bay, then going still further they found another strait and another bay larger than the first two, at which, being very joyous, they suddenly returned backwards to tell it to the captain-general. Amongst us we thought that they had perished: first because of the great storm: next because two days had passed that we had not seen

them: And being thus in doubt we saw the two ships under all sail, with ensigns spread, come towards us: these, when near us, suddenly discharged much artillery, at which we, very joyous, saluted them with artillery and shouts. Afterwards, altogether, thanking God and the Virgin Mary, we went to seek further on.

If we had not found this strait the captain-general had made up his mind to go as far as 75 degrees towards the antarctic pole: where at that height in the summer time there is no night, or very little: in a similar manner in the winter there is no day-light, or very little, and so that every one may believe this, when we were in this strait the night lasted only three hours, and this was in the month of October.

You will learn from the above description what a difficult sea passage the Straits of Magellan is, and it shows us how skilful Magellan and the other ships' captains were, to be able, through such a narrow winding channel and with such strong head winds blowing, to bring their ships in safety to the ocean that lay beyond.

The finding of this route from the Atlantic to the Pacific Ocean is one of the great discoveries that have been made from time to time. The Spaniards had been seeking for such a route ever since Columbus had found the New World for them, and at last they were successful, but we must remember that it was Magellan, a Portuguese, who was the real cause of their success.

Now look at a globe and cast your eye across the great Pacific Ocean, from the Straits of Magellan to the east coast of Asia. What a distance it seems! And this was the ocean that Magellan now set out to cross, not knowing in the least what a long journey was in front of him.

Again let us read the account in the actual words of one

who actually made the journey, and experienced all the dangers and privations which lay in store for these daring travellers.

3. Wednesday, the 28th of November, 1520, we came forth out of the said strait, and entered into the Pacific Sea, where we remained three months and twenty days without taking in provisions or other refreshments, and we only ate old biscuit reduced to powder, and full of grubs, and stinking from the dirt which the rats had made on it when eating the good biscuit, and we drank water that was yellow and stinking. We also ate the ox hides which were under the main-yard, so that the yard should not break the rigging: they were very hard on account of the sun, rain, and wind, and we left them four or five days in the sea, and then we put them a little on the embers, and so ate them; also the sawdust of wood, and rats which cost half-a-crown each, moreover enough of them were not to be got. Besides the above mentioned evils, this misfortune which I will mention was the worst, it was that the upper and lower gums of most of our men grew so much that they could not eat, and in this way so many suffered that nineteen died. Besides those who died, twenty-five or thirty fell of divers sicknesses, both in the arms and legs, and other places, in such manner that very few remained healthy. However, thanks be to the Lord, I had no sickness. During these three months and twenty days we were in an open sea, while we ran fully four thousand leagues in the Pacific sea. This was well named Pacific, for during this same time we met with no storm, and saw no land except two small uninhabited islands, in which we found only birds and trees. We

named them the Unfortunate Islands: they are two hundred leagues apart from one another, and there is no place to anchor, as there is no bottom. There we saw many sharks. The first isle is in fifteen degrees of austral latitude, and the other island is in nine degrees. With the said wind we ran each day 50 or 60 leagues or more. And if our Lord and His Mother had not aided us in giving us good weather to refresh ourselves with provisions and other things, we should all have died of hunger in this very vast sea, and I think that never man will undertake to perform such a voyage.

But in spite of all the hardships the ocean was crossed, and now the east had really been reached by sailing to the west. It is not surprising, after all that they had undergone, that the man who wrote the account should say, "I think that never man will undertake to perform such a voyage." Little did he think that in years to come the Pacific would be crossed by hundreds of ships, steaming in spite of winds or calm backwards and forwards between Asia and America, carrying their precious cargoes of people and goods. But thus it is that the journeys that are undertaken to-day in ease and even luxury, were opened up for us by these brave daring sailors of past ages.

The first islands at which Magellan landed he called the Ladrone Islands, because he found the people who lived there were great thieves; and having obtained food and water he sailed away to the Philippines. Here a most unexpected thing happened. Two of the native princes were at war with one another, and Magellan, in helping one of them to overcome the other, unfortunately was killed. Thus he never received even the thanks of the Spanish king for having brought to Spain the great renown of being the first people to circumnavigate the earth.

After his death the crew chose another commander whose name was del Cano, but two ships returned across the Pacific towards America thinking that that was the easiest way back home. I think they were never heard of again. The remaining ships sailed from the Philippines to the Molucca or Spice Islands—the islands whence the Portuguese obtained so many of the spices which brought them so much wealth. One ship was wrecked, and the remaining one, the *Victoria*, succeeded in crossing the Indian Ocean, rounding the Cape of Good Hope, and finally reached Spain, with the few survivors on board, three years after they had set out on this memorable voyage.

Read the next extract carefully, for it contains a most interesting geographical fact that results from the shape of the earth; and it also describes the end of the voyage.

4. In order to see whether we had kept an exact account of the days, we charged those who went ashore (Cape Verde Islands) to ask what day of the week it was, and they were told by the Portuguese inhabitants of the island that it was Thursday, which was a great cause of wondering to us, since with us it was only Wednesday. We could not persuade ourselves that we were mistaken; and I was more surprised than the others, since, having been always in good health, I had every day, without intermission, written down the day that was current. But we were afterwards advised that there was no error on our part, since we had always sailed towards the west, following the course of the sun, and had returned to the same place, we must have gained twenty-four hours, as is clear to anyone who reflects upon it.

At last, when it pleased Heaven, on Saturday, the 6th of September, of the year 1522, we entered the

Bay of San Lucar: and of sixty men who composed our crew when we left Maluco, we were reduced to only eighteen, and these for the most part sick. Of the others, some died of hunger, some had run away at the Island of Timor, and some had been condemned to death for their crimes.

From the day when we left this bay of San Lucar until our return thither, we reckoned that we had run more than fourteen thousand four hundred and sixty leagues, and we had completed going round the earth from East to West. Monday, the 8th of September, we cast anchor near the mole of Seville, and discharged all the artillery.

Tuesday, we all went in shirts and barefoot, with a taper in our hands to visit the shrine of St. Maria of Victory, and of St. Maria de Antigua.

What a strange ending to such a wonderful journey! If you had been in Seville on Tuesday the 9th of September, 1522, you would have seen these first sailors to sail round the world, walking through the street of the town barefoot, with tapers in their hands going to do penance. They unknowingly, during the second half of their voyage, had been keeping the saints' days on the wrong day, and so they thought they had angered the saints and must do penance for their sins.

If you compare this great voyage with that of Columbus, you will see that while Columbus achieved none of the objects for which he set out, everything that Magellan set out to do was done. His objects were, first to find a sea passage through the New World of America, and the Straits of Magellan were discovered; second to reach the east by sailing to the west, and this was accomplished; third to find the islands from which the Portuguese obtained

the spices, and these islands were found; and lastly to circumnavigate the earth; and although only one ship out of the five that started returned to Spain, still this ship, with her crew of eighteen weather-worn sailors, had sailed right round the earth, thus bringing glory and honour to Spain in having accomplished one of the most memorable voyages ever undertaken by man.

There are many more very interesting paragraphs in the record of this voyage besides those we have already read in this chapter, but we must content ourselves for the present with just one more.

In this paragraph the writer describes the uses of the coconut-palm tree to the natives who lived in the Philippine Islands. If you have traced on a map the route followed by Magellan you will have seen where these islands are situated. Find them again, and then read the account carefully.

5. To explain the kind of fruits above named it must be known that the one which they call coco is the fruit which the palm trees bear. And as we have bread, wine, oil and vinegar, proceeding from different kinds, so these people have those things proceeding from these palm trees only. It must be said that wine proceeds from the said palm trees in the following manner. They make a hole at the summit of the tree as far as its heart, which is named palmito, from which a liquor comes out in drops down the tree, like white must, which is sweet, but with somewhat of bitter. They have canes as thick as the leg, in which they draw off this liquor, and they fasten them to the tree from the evening till next morning, and from the morning to the evening, because this liquor comes little by little. This palm produces a fruit named coco, which is as large as

the head, or thereabouts: the first husk is green, and two fingers in thickness: in it they find certain threads, with which they make the cords for fastening their boats. Under this husk there is another very hard, and thicker than that of a walnut. They burn this second rind, and make with it a powder which is useful to them. Under this rind there is a white marrow of a finger's thickness, which they eat fresh with meat and fish, as we do bread, and it has the taste of an almond, and if anyone dried it he might make bread of it. From the middle of this marrow there comes out a clear sweet water, and very cordial, which, when it has rested a little, and settled, congeals and becomes like an apple. When they wish to make oil, they take this fruit, the coco, and let it get rotten, and then corrupt this marrow in the water, then they boil it, and it becomes oil in the manner of butter. When they want to make vinegar, they let the water in the coco-nut get bad, and they put it in the sun, where it turns to vinegar like white wine. From this fruit milk also can be made, as we experienced, for we scraped this marrow and then put it with water, and passed it through a cloth, and thus it was milk like that of goats. This kind of palm tree is like the date-palm but not so rugged. Two of these trees can maintain a family of ten persons: but they do not draw wine as above mentioned, always from one tree, but draw from one for eight days, and from the other as long. For if they did not, otherwise the trees would dry up.

In the early part of this chapter we have learned something of the Portuguese voyagers and how they found their way round Africa to India at the close of the fifteenth

century. The two following extracts were written by an English merchant named William Barret, who went to the East about fifty years later. He had many adventures, and has written a long account of what he saw and what happened during this journey.

6. Note, that the city of Goa is the principal place of all the oriental India and the winter there beginneth the 15th of May with very great rain, and so continueth till the first of August, so that during that space, no ship can pass over the bar of Goa, because through the continual showers of rain all the sands join together, and all these sands being joined together run into the shoals of the bar and port of Goa, and can have no other issue, but to remain in that port, and therefore it is shut up until the first of August, but at the tenth of August it openeth by reason of the rain which ceaseth, and the sea doth then scour the sands away again.

7. The ships which come from Portugal for the Indies depart thence ordinarily betwixt the tenth and fifteenth of March, coming the straight way during the month of July to the coast of Melinde¹ and Mosambique, and from thence go straight for Goa, and if in the month of July they cannot be at the coast of Melinde, they can in no wise fetch Melinde, but return to the Isle of St. Helena, and so are not able that time being past, to fetch the coast of India, and to come straight for Goa. Therefore (as is above said) they return to the Island of St. Helena, and if they cannot make the said Island, then they run as lost upon the coast of Guinea : but if the said ships be arrived in time

¹ Malindi.

upon the coast of Melinde, they set forwards for Goa, and if by the fifteenth of September they cannot fetch Goa, then they go for Cochin, but if they see they cannot fetch Cochin, they return to Mosambique to winter there upon the said coast.

EXERCISES

21. Of what use was the coconut palm to the natives in the East Indies? Of what use is the coconut to us?

22. What additions to geographical knowledge were made by the first men who sailed round the earth?

23. Explain why it was that although Magellan was a Portuguese he sailed in a Spanish ship on his great voyage.

24. Measure on a globe the length of this great voyage, and see if your answer agrees with the distance mentioned in extract No. 4. If not, try to explain why.

25. Read the story of Saint Anselm as given in extract No. 1. [This story will appear strange and unreal to you. Many sailors have seen the tops of the masts glowing with a brilliant light during a thunder-storm. The story is true, but the writer's explanation of it is old-fashioned. Try and find out how we explain such an appearance to-day.]

26. Find all the places mentioned in extracts Nos. 5 and 6 on your map. Look carefully at the position of Goa. Is it north or south of the Equator? Why does the writer say that *winter* there lasts from the middle of May to August? What difference is there in the climate of Goa from May to August, compared with that from September to April as can be gathered from this account? From the position of Goa on the map and its distance from the Equator, should you expect it ever to be cold at Goa? What would be better names for its seasons than winter and summer?

27. In what direction would you expect the wind to blow at Goa during the months May to August? Why? During the months September to April? Why?

28. Draw a sketch-map of the Indian Ocean and mark in the direction of these winds. Mark also Goa, Cochin, Mozambique, Melinde. Read carefully extract No. 6, and see if you can understand it with the help of your map.

CHAPTER V

JACQUES CARTIER—A FRENCHMAN

JACQUES CARTIER, as his name shows, was not an Englishman. He was a Frenchman, and his home was in Brittany, the north-west corner of France. If you examine a map of France you will see that Brittany, like the south-west peninsula of England, has an indented coastline, with many arms of the sea reaching inland, and many arms of the land stretching out seawards. Such a land usually produces sailors. The men become accustomed to the sea as fishermen, and generally we find that some of them, not content with fishing in the waters near home, become just the men to sail over the ocean to foreign lands. Such a man was Cartier. He was born in the town of St. Malo in the year 1491, but we know nothing for certain about his parents or his boyhood days. But we can guess that he became a sailor as soon as he was old enough, and that he became an expert too, or he would not have been put in command of a French expedition which crossed the Atlantic towards the west in 1534.

If you have followed carefully what you have read in the previous chapters, you will remember that Spain had found the New World by sailing to the west, and Portugal had reached India by sailing to the east, and thus these two countries had become wealthy and powerful. Nevertheless, they were jealous and envious of each other, and the Kings of Spain and of Portugal had appealed to the

Pope to settle their quarrels. To do this he had issued a decree that all unknown lands to the east of a line, drawn from north to south of the world and passing through the mouth of the Amazon, should belong to Portugal, and that all unknown lands to the west of the same line should belong to Spain. Of course, both Spain and Portugal agreed to this because they thought that each would get untold wealth and extensive territory. But what about other countries in Europe? Were they also satisfied? Naturally they were not, and France was one of the first to demur at the action of the Pope.

Thus it came about that in 1534 the French fitted out an expedition under Cartier, whose instructions were to search for new lands and also a new route to Cathay. The vessels sailed out of the harbour of St. Malo on April 20, and reached the island of Newfoundland on May 10. This was not a discovery, for John Cabot, an Italian, had sailed in an English boat from Bristol and discovered Newfoundland thirty-seven years previously. Nothing very notable occurred during the voyage. They sailed through the Strait of Belle Isle into the Gulf of St. Lawrence, and cruised about in its waters for a short time. Then, taking two of the natives with them, they returned to France in September of the same year.

A year later—that is, in 1535—Cartier was in command of a second expedition to Newfoundland. This time he carefully explored the St. Lawrence River, and stayed there during the following winter. He named many of the geographical features of the district, and if you examine a map of this part of Canada you will find many French names dotted about the map. It is much better for us to read of what he did and the things he saw, as described by one of his companions, than to read anyone else's account. The following is his description of the St. Lawrence River, up which he sailed during August and September, 1535:

1. The 14th of the said month (August) we went from the said St. Lawrence his Bay, or Gulf, sailing westward. I believe that there were never so many whales seen as we saw that day. Our wild men told us that there was the beginning of Saguenay, and that it was land inhabited, and that thence cometh the red copper. There is between the southerly lands and northerly about 30 leagues distance, and more than 200 fathom deep. The said men did moreover certify unto us that there was the way and beginning of the great river of Hochelaga, and ready way to Canada: which river the further it went the narrower it came even unto Canada, and that then there was fresh water, which went so far upwards, that they had never heard of any man who had gone to the head of it, and that there is no other passage but with small boats. Our captain hearing their talk, and how they did affirm no other passage to be there, would not at that time proceed any further, till he had seen and noted the other lands and coast towards the north, which he had omitted to see from St. Lawrence his Gulf, because he would know if between the lands towards the north any passage might be discovered. The Thursday following we came to seven very high islands. These islands are distant from the south shore about 40 leagues, and stretch out into the sea about 3 or 4 leagues. Overthwart these islands there are divers sandy shelves more than two leagues into the sea, very dangerous, which at a low water remain almost dry. In the same place, by occasion of contrary winds and foggy mists, we were constrained to stay, not being able to come out till the 24th of the month. On which day we departed and came to a haven on the

southerly coast about 80 leagues from the said islands. Upon the 1st of September we departed out of the said haven, purposing to go toward Canada: and about 15 leagues from it towards the west and west-south west, amidst the river there are three islands, over against the which there is a river which runneth swift, and is of a great depth, and it is that which leadeth into the country of Saguenay.

2. The next day, being the 19th of September, we hoisted sail, and departed, to go up the river with the flood: where on both shores of it we began to see as goodly a country as possibly can with eye be seen: all replenished with very goodly trees, and vines laden as full of grapes as could be, all along the river, which rather seemed to have been planted by man's hand than otherwise. True it is, that because they are not dressed and wrought as they should be, their bunches of grapes are not so great nor sweet as ours. Also we saw all along the river many houses inhabited of fishers, which take all kinds of fishes. We stayed at a place called Hochelay, where the river waxeth very narrow and runneth very swift: wherefore it is very dangerous, not only for that, but also for certain great stones that are therein. From the 19th until the 28th of September we sailed up along the said river never losing one hour of time: all which time we saw as goodly and pleasant a country as possible can be wished for, full of all sorts of goodly trees, that is to say, oaks, elms, walnut trees, cedars, firs, ashes, box, willows, and great store of vines, all as full of grapes as could be, so that if any of our fellows went on shore, they came home laden with them. There are likewise many cranes, swans, geese, ducks, pheasants, partridges, thrushes, black-

birds, turtles, finches, redbreasts, nightingales, sparrows of divers kinds, with many other sorts of birds even as in France. Upon the 28th of September we came to a great wide lake in the middle of the river, five or six leagues broad, and twelve long. All that day we went against the tide, having but two fathom water.

If you examine your map of Canada and find the city of Montreal, that will show you how far Cartier penetrated into the continent. The Indian town that they called Hochelaga was situated here, and the next paragraph will describe for you both the appearance of the town and also some of the manners and customs of the people who lived there.

3. The city of Hochelaga is round, compassed about with timber, with three courses of rampires, one within another, framed like a sharp spire, but laid across above. The rampires are framed and fashioned with pieces of timber laid along on the ground, very well and cunningly joined together after their fashion. This enclosure is in height about two rods. It hath but one gate or entry thereat, which is shut with pikes, stakes and bars. Over it, and also in many places of the wall, there be places to run along, and ladders to get up, all full of stones for the defence of it. There are in the town about fifty houses, about fifty paces long, and twelve or fifteen broad, built all of wood, covered over with the bark of the wood, as broad as any board, very finely and cunningly joined together. Within the said houses there are many rooms, lodgings and chambers. In the midst of every one there is a great court, in the middle whereof they make their fire. They live in common together: then do the husbands, wives, and

children, each one retire themselves to their chambers. They have also on the top of their houses certain garrets wherein they keep their corn to make their bread withal. They have certain pieces of wood, made hollow like those whereon we beat our hemp, and with certain beetles of wood they beat their corn to powder. Then they make paste of it, and of the paste, cakes. Then they lay them on a broad and hot stone, and then cover it with hot stones, and so they bake their bread, instead of ovens. They make also sundry sorts of pottage with the said corn, and also of peas and of beans, whereof they have great store, as also with other fruits, as melons and very great cucumbers. They have also in their houses certain vessels as big as any butt or tun, wherein they preserve and keep their fish, causing the same in summer to be dried in the sun, and live therewith in winter, whereof they make great provision, as we by experience have seen. All their viands and meats are without any taste or savour of salt at all. They sleep upon barks of trees laid all along upon the ground, being overspread with the skins of certain wild beasts, wherewith they also clothe and cover themselves.

After visiting Hochelaga, Cartier commenced his return voyage down the river towards the sea. We do not know for certain whether he intended to remain in the St. Lawrence during the winter, or whether his intention was to return directly to France. Whatever his intentions were, we find that he had to remain, for his ship was frozen fast in the ice, and the experiences of that winter would never be forgotten by Cartier and his bold sailors.

The following paragraph tells us what happened, and when we remember that France is ever a warmer country than

England, we can partly understand what a terrible time these Frenchmen must have had during those winter months.

4. From the midst of November until the midst of March, we were kept in amidst the ice above two fathoms thick, and snow above four foot high and more, higher than the sides of our ship : which lasted till that time, in such sort that all our drinks were frozen in the vessels, and the ice through all the ships was about a hand-breadth thick, as well above hatches as beneath : and so much of the river as was fresh, even to Hochelaga, was frozen. In which space there died five-and-twenty of our best and chiefest men, and all the rest were so sick that we thought they should never recover again, only three or four excepted. Then it pleased God to cast His pitiful eye upon us, and send us the knowledge of remedy of our healths and recovery, in such manner as in the next chapter shall be showed.

The remedy that is spoken of here was one that the Indians taught them. It was, of course, very simple. They had to take the bark and leaves of a certain tree and boil them for some time in water, and then when cool the water had to be drunk by the invalids. It seems from the above account that this remedy was successful.

On May 16 in the following year, 1536, Cartier started on his return voyage, and reached St. Malo on July 6.

He crossed the Atlantic again in 1541 with a third expedition, and then as far as we know he spent the remainder of his life at home in St. Malo. He was always consulted on matters relating to the sea, and acted as adviser to the French Government in nautical affairs. He was a capable

sailor and genuine explorer, and although he never found a new route to China, the work that he did on the St. Lawrence enabled the French to found colonies there seventy years later.

EXERCISES

29. To what dangers is the sailor exposed when sailing up the St. Lawrence River as can be gathered from the description of Cartier's voyage? What has been done, since Cartier's time, to make it less dangerous? [A few years ago a large steamer, the *Empress of Ireland*, was sunk in the St. Lawrence. Try to find the story of the disaster.]

30. Collect as many pictures as you can of Montreal and the River St. Lawrence. Contrast the present-day Montreal with the ancient Indian town of Hochelaga.

31. Examine a physical map of Eastern Canada. Why do you think the Indians chose the site of Hochelaga for their most important town?

32. What additions to geographical knowledge were made by Cartier?

33. If you look at a map of Canada you will find that the St. Lawrence River flows from the Great Lakes (Superior, Michigan, Huron, Erie, Ontario). Did the Indians that Cartier met know of these lakes? See extract No. 1. Would this information please Cartier? Find the position in the St. Lawrence Estuary which is thirty leagues wide.

34. Write out a list of names in this part of America that are of French origin.

CHAPTER VI

MARTIN FROBISHER—AN ENGLISHMAN

YOU will have noticed that the earliest navigators mentioned in this book were what we call foreigners—that is, they were not Englishmen. It is true that in 1497 an English vessel called the *Matthew* crossed the Atlantic Ocean, with an English crew but in charge of an Italian, named John Cabot, and returned in a few months with the news of the discovery of Newfoundland. But it was not until the second half of the sixteenth century that England became famous for her navigators. Then such men as Drake, Hawkins, Frobisher, Davis, Hudson, Gilbert, Raleigh, Cavendish, and many more appear as daring seamen, who made the fame of England known over all the then known world.

Perhaps you already know something about Drake as a fighter and a sailor, but he was unlike either Columbus, Magellan, or Cartier, in that he did not set out on his voyages with the specified object of making discoveries. It is of Frobisher, chiefly, that we shall learn in this chapter, and we shall see that, like Cartier, he started on his voyage with the direct object of discovering a new route to the east.

He was born somewhere about the year 1535 at Normanton in Yorkshire, and went to sea on a trading voyage when he was nineteen years old. He became a very skilful sailor, and although he was no scholar, yet he learnt the art of practical navigation almost as well as any man of his time.

Besides this he was courageous and daring, and men learnt to trust in him as their leader. The result of all this was that he was chosen as captain of an expedition which sailed from England in 1576 in search of a north-west passage to Cathay.

You must remember that, at the time of which we are speaking, nothing was known about the northern coasts of North America, or, of course, the dangers and difficulties would have been known also. Look at the map of North America, and you will find in the northern archipelago a dozen names of brave Englishmen who at one time and another have braved those Arctic seas in order to try and find a sea passage that would lead them into the Pacific Ocean and so to Cathay. Frobisher was the first of these brave Englishmen.

It was on June 8, 1576, that the two boats, the *Gabriel* and the *Michael*, weighed anchor and sailed down the Thames.

Queen Elizabeth, we are told, waved her hand to them, and sent her secretary on board to wish the explorers happy success, and to charge all the men to be obedient and diligent to their captain in all things.

We are told that on July 11 "he had sight of a high and ragged land, which he judged to be Friseland (Greenland), but durst not approach the same by reason of the great store of ice that lay along the coast, and the great mists that troubled them not a little."

Sailing still farther to the north-west Frobisher imagined he had found a way through into the Pacific Ocean, but was prevented by ice and contrary winds from proceeding farther in that direction. He called this passage "Frobisher's Straits," but later it was shown to be not a strait but only a bay. He returned to England in October, and "was highly commended of all men for his great and notable attempt, but specially famous for the great hope he brought of the passage to Cathay."

The following extract taken from the account of this voyage will explain why a second expedition went out in the following year :

1. Some of his company brought flowers, some green grass : and one brought a piece of black stone much like to a sea-coal in colour, which by the weight seemed to be some kind of metal or mineral. This was a thing of no account in the judgment of the captain at the first sight : and yet for novelty it was kept in respect of the place from whence it came.

After his arrival in London, being demanded of sundry of his friends what thing he had brought them home out of that country, he had nothing left to present them withal but a piece of this black stone. And it fortuned a gentlewoman one of the adventurer's wives to have a piece thereof, which by chance she threw and burned in the fire, so long, that at length being taken forth and quenched in a little vinegar, it glistered with a bright marquesite of gold.¹ Whereupon the matter being called in some question, it was brought to certain gold-finers in London to make assay thereof, who gave out that it held gold, and that very richly for the quantity. Afterwards, the same gold-finers promised great matters thereof if there were any store to be found, and offered themselves to adventure for the searching of those parts from whence the same was brought.

It was on Monday, May 27, 1577, that the second expedition in the command of Frobisher sailed down the Thames bound to the icy north-west. Proceeding northwards along

¹ A gold-like alloy.

the east coasts of England and Scotland, he arrived at the Orkney Islands on June 7. The next extract taken from the account of this second voyage, written by Master Settle, will teach us much about the journey across the Atlantic.

You should have a map in front of you, and trace it out from the description.

2. We departed herehence (the Orkneys) the 8th of June, and followed our course between west and north-west until the 4th of July: all which time we had no night, but that easily and without any impediment we had when we were so disposed, the fruition of our books, and other pleasures to pass away the time: a thing of no small moment, to such as wander in unknown seas, and long navigations, especially, when the winds and raging surges do pass their common and wonted course. This benefit endureth in those parts not six weeks, while the sun is near the Tropic of Cancer: but where the pole star is raised to 70 or 80 degrees, it continueth much longer.

All along these seas, after we were six days sailing from Orkney, we met floating in the sea, great fir trees, which, as we judged, were with the fury of great floods, rooted up, and so driven into the sea. Iceland hath almost no other wood nor fuel, but such as they take up upon their coasts. It seemeth, that these trees are driven from some part of the new found land, with the current that setteth from the west to the east.

Here in place of odoriferous and fragrant smells of sweet gums, and pleasant notes of musical birds, which other countries in more temperate zones do yield, we tasted the most boisterous boreal blasts mixed with snow and hail, in the months of June and July, nothing

inferior to our untemperate winter : a sudden alteration and especially in a place or parallel, where the pole star is not elevate above 61 degrees: at which height other countries more to the north, yea unto 70 degrees, shew themselves more temperate than this doth.

This second voyage was similar to the first. The same difficulties and dangers arising from the ice and fogs were encountered, and it was found impossible to force a way through the ice into the Pacific. The boats were loaded with black stones, and the ships returned to England in September.

Again in 1578 he set out a third time with fifteen vessels, and this journey was only a repetition of the previous one. As a matter of fact the imagined discovery of gold had turned the men's minds, and they became fortune-seekers rather than explorers; and we know now that all the black stone they brought to England was worthless, for it contained no gold, but was only a common mineral made up of iron and sulphur. But we learn what men in those days, as now, would endure on the off-chance of becoming wealthy. Read the next extract taken from the third voyage.

3. At the first entering into the ice at the mouth of the Straights, our passage was very narrow and difficult, but being once got in we had a fair open space without any ice for the most part, being a league in compass, the ice being round about us and inclosing us, as it were, within the pales of a park. In which place (because it was almost night) we minded to take in our sails, and lie a hull all that night. But the storm so increased, and the waves began to mount aloft, which brought the ice so near us, and coming on so fast upon us, that we were fain to bear in and out, where we

might espy an open place. Thus the ice coming on us so fast, we were in great danger, looking every hour for death. And thus passed we on in that great danger, seeing both ourselves and the rest of our ships so troubled and tossed amongst the ice, that it would make the strongest heart to relent.

At the last the bark *Dionyse* being but a weak ship, and bruised afore amongst the ice, being so leaky that no longer she could tarry above the water, sank without saving any of the goods which were within her: which sight so abashed the whole fleet, that we thought verily we should have tasted of the same sauce. But nevertheless we seeing them in such danger, manned our boats and saved all the men in such wise, that no one perished: God be thanked.

The storm still increased and the ice enclosed us, so that we were fain to take down top and top masts: for the ice had so environed us, that we could see neither land nor sea, as far as we could ken. So that we were fain to cut our cables to hang overboard for fenders, somewhat to ease the ships' sides from the great and cruel strokes of the ice: some with capstan bars, some fending off with oars, some with planks two inches thick, which were broken immediately with the force of the ice, some going out upon the ice to bear it off with their shoulders from the ships. But the rigorousness of the tempest was such, and the force of the ice so great, that not only they burst and spoiled the foresaid provision, but likewise so rased the sides of the ships, that it was pitiful to behold, and caused the hearts of many to faint.

Thus we continued all that dismal and lamentable night plunged in this perplexity, looking for instant

death : but our God (who never leaveth them destitute which faithfully call upon him, although he often punisheth for amendments sake) in the morning caused the winds to cease, and the fog which all that night lay on the face of the water to clear : so that we might perceive about a mile from us, a certain place clear from any ice, to the which, with an easy breath of wind which our God sent us, we bent ourselves. And furthermore he provided better for us than we deserved or hoped for : for when we were in the aforesaid clear place, he sent us a fresh gale at west or at west-south-west, which set us clear without all the ice. And further he added more : for he sent us so pleasant a day as the like we had not of a long time before, as after punishment consolation.

Frobisher made no more attempts to sail in the Arctic seas, but he did not give up his seafaring life. He went to the West Indies, and later commanded one of the English ships in the great fight with the Spanish Armada. In this battle he so distinguished himself, that he was knighted for his bravery and skill, and so became Sir Martin Frobisher.

Although Frobisher had given up attempting to find a north-west passage to Cathay, there were other Englishmen ready to carry on the work. In the years 1585-6-7, John Davis, a Devon sailor, conducted three expeditions into the Arctic seas.

You will find Davis Strait marked on the map, and you will see that he went farther north than Frobisher had been, but still he was not successful ; he could not find the sea passage for which he sought. He was a different man from Frobisher. Quite as skilful as a navigator, he was also well educated, and invented or improved several of the instruments used by the sailors in those days for finding their

latitude. Thus we find in his record of his voyages a very accurate account given of the course he followed at sea, as well as a description of the coasts along which he sailed. Here is just one short extract.

4. The 28th and 29th of June were foggy with clouds, the 30th day we took the height and found ourselves in 72 degrees of latitude both at noon and at night, the sun being 5 degrees above the horizon. At midnight the compass set to the variation of 28 degrees to the westward.

Both of these explorers have provided us with interesting accounts of the people they found living on the shores of these lands in the frozen North. We call these people Eskimos, and we will conclude this chapter by reading some of the things that Frobisher tells us about them.

5. These people I judge to be a kind of Tartar. They are of the colour of a ripe olive, which how it may come to pass, being born in so cold a climate I refer to the judgment of others, for they are naturally born children of the same colour and complexion that all the Americans are, which dwell under the Equinocial line. They are men very active and nimble. They are a strong people and very warlike; and manage their bows and darts with great dexterity. They go clad in coats made of the skins of beasts, as of Seals, Deer, Beares, Foxes and Hares. They have also some garments of feathers finely sewed and compact together. Of all which sorts we brought home some with us into England, which we found in their tents.

In summer they use to wear the hairy side of their coats outward, and sometime go naked for too much heat. And in winter (as by signs they have declared),

they wear four or five folds upon their body with the hair (for warmth) turned inward. For there it is colder, being under 62 degrees in latitude, than it is at Wardhouse in the voyage to Saint Nicholas in Muscovy,¹ being at above 72 degrees in latitude.

These people are sharp witted, ready to conceive our meaning by signs and to make answer well to be understood again. And if they have not seen the thing whereof you ask them, they will wink, or cover their eyes with their hands, as who would say, it hath been hid from their sight. If they understand you not whereof you ask them, they will stop their ears. They will teach us the names of each thing in their language which we desire to learn, and are apt to learn anything of us. They delight in music above measure, and will keep time and stroke to any tune which you shall sing, both with their voice, head, hand and feet and will sing the same tune aptly after you. They will row with our oars in our boats, and keep a true stroke with our mariners, and seem to take great delight therein. They live in caves of the earth, and hunt for their dinners even as the bear or other wild beasts do. They eat raw flesh and fish, and refuse no meat howsoever it be stinking. For their weapons to offend their enemies or kill their prey withal, they have darts, slings, bows and arrows headed with sharp stones, bones, and some with iron. They are exceeding friendly and kind hearted one to the other, and mourn greatly at the loss or harm of their fellows, and express their grief of mind when they part one from another with a mournful song.

They have boats made of leather and covered clean

¹ Wardhouse = Vardo ; Muscovy = Russia (see page 116).

over, saving one place in the middle to sit in, planked within with timber, and they use to row therein with one oar, more swiftly a great deal, than we in our boats can do with twenty. They have one sort of greater boats wherein they can carry about twenty persons, and have a mast with a sail thereon, which sail is made of thin skins or bladders, sewed together with the sinews of fishes. They are good fishermen, and in their small boats being disguised with their coats of seal skins, they deceive the fish, who take them rather for their fellow seals, than for deceiving men.

They have nothing in use among them to make fire withal, except a kind of heath and moss which groweth there, and they kindle their fire with continual rubbing and fretting one stick against another, as we do with flints. They draw with dogs in sledges upon the ice, and remove their tents therewithal wherein they dwell in summer, when they go a hunting for their prey and provision against winter.

The women have their faces marked or painted over with small blue spots. They have black and long hair on their heads, and trim the same in a decent order. For their common drink, they eat ice to quench their thirst. Their earth yieldeth no grain, or fruit of sustenance for man.

Their longest summer day is of great length, without any dark night, so that in July all the night long, we might perfectly and easily write and read whatsoever had pleased us, which lightsome nights were very beneficial unto us, being so distressed with abundance of ice as we were.

EXERCISES

35. Were the black stones that Frobisher brought back the same as the black stones that Marco Polo had seen in China?

36. What additions to geographical knowledge were made by Frobisher?

37. What do we call the people who live on the shores of the lands visited by Frobisher and Davis? Write in your own words a description of them.

38. Find a picture if you can of an Eskimo in his kayak (canoe). Is it like the description given in extract No. 5.

39. Find a reference in extract No. 5 to show that probably there is some relation between the peoples of Northern America and Northern Asia. [Refer back to Marco Polo, extract No. 5.]

CHAPTER VII

FRANCIS DRAKE—AN ENGLISHMAN

“ Drake he was a Devon man, and ruled the Devon seas.”

THIS is the first line of a poem written by Henry Newbolt, an English poet of to-day, in praise of Sir Francis Drake ; and, with most boys, there is scarcely a character in English history that appeals more strongly than that of Drake. We usually learn of him in history books and lessons, rather than in geography ; but as he was the first Englishman to sail a vessel round the earth, and perhaps also was the first Englishman to see the Pacific Ocean, every student of geography should know something about him and what he did. He was, however, more of a soldier than an explorer.

He was born about the year 1540, near Tavistock in Devonshire, and as a youth was apprenticed to the master of a small vessel engaged in trading between England and the Continent. He gave all his attention and energy to his trade, and so pleased his master, that when the latter, who was an old man, died he bequeathed his boat to Drake.

Nothing could have pleased young Drake more than this, to be master of his own ship ; and his name soon became well known throughout Devon for his daring exploits at sea, his bravery and skill as a sailor.

Later we find him engaged with Sir John Hawkins in the slave trade between the west coast of Africa and the Spanish possessions in America. The Spaniards strongly

objected to anyone, especially Englishmen, taking part in this trade, and put every obstacle in the way. They forbade people in the West Indies trading with the English ships, and whenever Spanish and English ships met at sea there was sure to be a sea-fight. On one occasion Sir John Hawkins and Drake were treated most treacherously by the Spaniards, and Drake vowed that he would have his revenge.

At this time, soon after the middle of the sixteenth century, the Spaniards had added Peru to their conquests in the New World. Peru was exceedingly rich in the precious metals silver and gold, and the conquerors obtained enormous stores of these metals from this land. The gold and silver were brought from Peru along the west coast of South America northwards to Panama. Here they were transferred from the ships to the backs of mules, and carried across the narrow isthmus of Panama to a Spanish fort named Nombre-de-Dios, and thence shipped to Spain.

You should look at your map and trace out this route, and see why the Spaniards used this route instead of any other.

Drake had found out this information while in the West Indies, and now he laid his plans. He decided that he would attack the mule-train, as it was called, as it crossed the isthmus of Panama. We have not time to go into all the details of how he carried out his plans, and it must be sufficient for us to know that he was not altogether successful, but he managed to bring back to England enough booty to pay for the expedition and make himself a wealthy man. He arrived back in Plymouth on Sunday morning, August 9, 1573, during sermon-time while the people were in church, and we are told that "the news of Drake's return did so speedily pass over all the church, and did so surpass their minds with desire and delight to see him, that very few or none remained with the preacher, all hastening to see the evidence of God's love and blessing towards our gracious

Queen and country." This is what a man in Plymouth tells us occurred on that Sunday morning when Drake returned.

During this journey Drake, while on the isthmus of Panama, had been taken by a native to a tree which he climbed, and from which he could see the great Pacific Ocean, and we are told that while there he besought Almighty God of His goodness to grant him life and leave to sail once in an English ship upon that sea.

Now Drake was not satisfied with the booty that he had brought home. He did not think that he had sufficiently repaid the Spaniards for their treachery. He wanted to teach them such a lesson that they would never again treat Englishmen as they had treated him and Sir John Hawkins. So again he set his mind to work, and conceived a plan whereby he thought he would be able to give the Spaniards a great surprise, and avenge the wrongs that they had done to him. It was in carrying out this project that Drake circumnavigated the earth, and we shall learn most of what he did by studying the record of the voyage as written by those who went with him.

It was on November 15, 1577, that Drake started from Plymouth on his famous voyage, but the following morning such a dreadful storm arose that he was obliged to put into Falmouth harbour for shelter, and it was not until December 13 that the repairs were complete, and all was ready to put to sea again. The chronicler of the voyage says "he departed with a fleet of five ships and barks, and to the number of 164 men, gentlemen and sailors, giving out his pretended voyage to Alexandria." Of course, he wanted nobody to know where he was going, lest the Spaniards should hear about it; that is why he said he was going to Alexandria. By January 17 he had reached Cape Blanco on the west coast of Africa, and by the 27th of the same month he had arrived at the Cape Verde Islands.



FIG. 4.—THE WORLD AS MAPPED IN 1569.

This is taken from a map of the world drawn by Mercator in 1569. It shows how men's knowledge of the world had improved after the great voyages of Columbus and Magellan. Compare it with a map of the world in your atlas and notice where this one is wrong. Especially notice what is called The Great Southern Continent, compare it with Antarctica, and see if you can find Australia.

Here we will let these daring sailors tell their own story of what they saw and experienced in this part of their journey.

You should have a map of the world in front of you, and follow the journey upon it, and always try to remember what happened in the different parts of the voyage.

1. We fell with this Island (one of the Cape Verde Islands) the 27th of January. Here we gave ourselves a little refreshing, as by very ripe and sweet grapes, which the fruitfulness of the earth at that season of the year yielded us: and that season being with us the depth of winter, it may seem strange that those fruits were then there growing: but the reason thereof is this, because they being between the tropic and the equinoctial, the sun passeth twice in the year through their zenith over their heads, by means whereof they have two summers, and being so near the heat of the line, they never lose the heat of the sun so much, but the fruits have their increase and continuance in the midst of winter.

The island is wonderfully stored with goates and wild hens, and it hath salt also without labour, save only that the people gather it into heaps, which continually in great quantity is increased upon the sands by the flowing of the sea, and the receiving heat of the sun kerning¹ the same, so that of the increase thereof they keep a continual traffic with their neighbours.

Amongst other things we found here a kind of fruit called Cocos, which because it is not commonly known with us in England, I thought good to make some description of it.

¹ Solidifying (by evaporation).

The tree beareth no leaves nor branches, but at the very top; the fruit groweth in clusters, hard at the top of the stem of the tree, as big every several fruit as a man's head: but having taken off the outermost bark which you shall find to be very full of strings or sinews, as I may term them, you shall come to a hard shell which may hold of quantity in liquor, a pint commonly, or some a quart, and some less: within that shell of the thickness of half an inch good, you shall have a kind of hard substance and very white, no less good and sweet than almonds: within that again a certain clear liquor, which being drunk, you shall not only find it very delicate and sweet, but most comfortable and cordial.

2. Being departed from these islands (Cape Verde), we drew towards the line, where we were becalmed the space of three weeks, but yet subject to divers great storms, terrible lightnings and much thunder: but with this miserie we had the commodity of great store of fish, as dolphins and flying fishes, whereof some fell into our ships, wherehence they could not rise again for want of moisture, for when their wings are dry they cannot fly.

From the first day of our departure from the Islands of Cape Verde we sailed 54 days without sight of land, and the first land we fell in with was the coast of Brazil, which we saw the fifth of April in the height of 33 degrees towards the pole Antarctic.

The ship upon which Drake himself sailed was called the *Pelican*, which name later on in the voyage, he changed and called it the *Golden Hind*, and another ship in the fleet was called the *Elizabeth*. Now the captain of the *Elizabeth* was a good seaman named John Winter, and the mate was

named Edward Cliffe. This man Cliffe wrote an account of part of the voyage, and the following extracts taken from his book, referring to the same part of the voyage are well worth studying. We shall hear something more about the *Elizabeth* later in the chapter.

3. This Cape Blanco sheweth itself like the corner of a wall upright from the water, to them which come from the northwards, where the north pole is elevated 20 degrees 30 mins. And the Crociers being the guards of the South pole, be raised 9 degrees 30 mins. The said Crociers be four stars, representing the form of a cross, and be 30 degrees in latitude from the south pole: and the lowest star of the said Crociers is to be taken when it is directly under the uppermost: and being so taken, as many degrees as it wanteth of 30, so many are you to the northwards of the Equinoctial: and as many degrees as be more than 30, so many degrees you are to the southwards of the Equinoctial. And if you find it to be just 30 then you be directly under the line.

4. The 2nd of February, we set off from Brava,¹ and directed our course south-south-west, running so until the 9th of February, being within 4 degrees of the equinoctial: at which time, we had the air troubled with thunder and lightning, notwithstanding calm, with extreme heat, and divers time great showers of rain. The 17th day we were right under the line, which is the most fervent place of the burnt zone: where in the midst of February we sustained such heat, with often thunder and lightnings, that we did sweat for the most part continually, as though we had been in a stove or hot house. And here is to be noted that after we came

¹ One of Cape Verde Islands.

within four degrees of the Equinoctial, until we were so much past it, no day did pass without great store of rain.

If you have followed the voyage on the map you will see that the next part of the journey was southwards along the east coast of South America. On June 20 they anchored in the Bay of St. Julian, and stayed here a short time, and it was not until August 21 that they reached the Straits of Magellan. In a previous chapter you have read about these straits, and Magellan's experience when sailing through them. Now you will read an Englishman's description of the same straits.

5. The 21 day of August we entered the Strait, which we found to have many turnings, and as it were shuttings-up, as if there were no passage at all. By means whereof we had the wind often against us, so that some of the fleet recovering a cape or point of land, others should be forced to turn back again, and to come to an anchor where they could.

In this strait there be many fair harbours with store of fresh water, but yet they lack their best commodity: for the water is there of such depth, that no man shall find ground to anchor in, except it be in some narrow river or corner, or between some rocks: so that if any extreme blasts or contrary winds do come (whereunto the place is much subject) it carrieth with it no small danger.

The land on both sides is very huge and mountainous: the lower mountains whereof, although they be monstrous and wonderful to look upon for their height, yet there are others which in height exceed them in a strange

manner, reaching themselves above their fellows so high, that between them did appear three regions of clouds.

These mountains are covered with snow. At both the southerly and easterly parts of the strait there are islands, among which the sea has his indraught into the straits, even as it hath in the main entrance of the strait.

This strait is extreme cold, with frost and snow continually: the trees seem to stoop with the burden of the weather, and yet are green continually, and many good and sweet herbs do very plentifully grow and increase under them.

The breadth of the Strait is in some places a league, in some other places two leagues, and three leagues, and in some other four leagues, but the narrowest place hath a league over.¹

The 24 of August we arrived at an island in the straits, where we found great store of fowl which could not fly, of the bigness of geese, whereof we killed in less than one day 3000 and victualled ourselves thoroughly therewith. The 6 day of September we entered the South Sea at the cape or head shore.

It was anything but a peaceful sea that Drake entered on leaving the Straits of Magellan, for a great storm arose and drove the ships hither and thither. Drake cruised about for some time in the neighbourhood of the straits hoping to meet with some of the other ships, but he found none. The *Elizabeth*, as a matter of fact, was driven through the straits again, and returned safely to England. And now Drake commenced his voyage northwards along the west coast of South America, and the following extract will tell you all about this part of the journey:

¹ *I. e.*, is a league wide.

6. Our general set sayle towards the coast of Chili and brought us to the place which is called the port of Valparaiso. When we came thither we found a ship riding at anchor, having in her eight Spaniards and three Negroes, who thinking us to have been Spaniards and their friends, welcomed us with a drum and made ready a botija¹ of wine of Chili to drink to us: but as soon as we were entered, one of our company called Thomas Moon began to lay about him, and struck one of the Spaniards and said to him "Abaxo perro," that is in English "Go down, dog." One of these Spaniards seeing persons of that quality in those seas, crossed and blessed himself: but to be short, we stowed them under hatches all save one Spaniard, who suddenly and desperately leapt overboard into the sea, and swam ashore to the town of S. Iago (Santiago), to give them warning of our arrival. They of the town being not above nine households, presently fled away and abandoned the town. Our general manned his boat and the Spanish ship's boat, and went to the town, and being come to it, we rifled it, and came to a small chapel which we entered, and found therein a silver chalice, two cruets, and one altar cloth, the spoil whereof our general gave to M. Fletcher his minister. We found also in this town a warehouse stored with wine of Chili, and many boards of cedar-wood, all which wine we brought away with us and certain of the boards to burn for fire-wood: and so being come aboard we departed the haven, having first set all the Spaniards on land, saving one John Griego, a Greek born, whom our general carried with him for his pilot to bring him into the haven of Lima.

When we were at sea, our general rifled the ship, and

¹ Jug or earthen jar.

found in her good store of the wine of Chili, and 25000 pezoës of very fine and pure gold of Valdivia, amounting in value to 37000 ducats of Spanish money, and above. So going on our course, we arrived next at a place called Coquimbo, where our general sent fourteen of his men on land to fetch water.

From hence we went to a certain port called Tarapaza,¹ where being landed, we found by the sea-side a Spaniard lying asleep, who had lying by him 13 bars of silver, which weighed 4000 ducats Spanish: we took the silver and left the man.

Not far from hence going on land for fresh water, we met with a Spaniard and an Indian boy driving eight Llamas or sheep of Peru which are as big as asses: every of which sheep had on his back two bags of leather, each bag containing 50 lb. weight of fine silver: so that bringing both the sheep and their burden to the ships, we found in all the bags 800 lb. weight of silver.

Here hence we sailed to a place called Arica, and being entered the port, we found there three small barks which we rifled, and found in one of them 57 wedges of silver, each of them weighing about 20 lb. weight, and every of these wedges were of the fashion and bigness of a brick-bat. In all these 3 barks we found not one person: for they mistrusting no strangers, were all gone a-land to the town, which consisteth of about twenty houses, which we would have ransacked if our company had been better and more in number. But our general contented with the spoil of the ships, left the town and put off again to sea and set sail for Lima, and by the way met with a small bark, which he boarded, and found in her good store of linen cloth, whereof taking some quantity he let her go.

¹ Iquiqui.

To Lima we came the 13 day of February, and being entered the haven, we found there about twelve sail of ships lying fast moored at anchor, having all their sails carried on shore: for the masters and merchants were here most secure, having never been assaulted by enemies, and at this time feared the approach of none such as we were. Our general rifled these ships, and found in one of them a chest full of *royals* of plate,¹ and good store of silks and linen cloth, and took the chest into his own ship, and good store of the silks and linen. In which ship he had news of another ship, called the *Cacafuego*, which was gone towards Payta, and that the same ship was laden with treasure: whereupon we stayed no longer here, but cutting all the cables of the ships in the haven, we let them drive whither they would, either to sea or to the shore, and with all speed we followed the *Cacafuego* towards Payta, thinking there to have found her: but before we arrived there, she was gone from thence towards Panama, whom our general still pursued, and by the way met with a bark laden with ropes and tackle for ships, which he boarded and searched, and found in her 80 lb. weight of gold, and a crucifix of gold with great emeralds set in it which he took, and some of the cordage also for his own ship.

From hence we departed, still following the *Cacafuego*, and our general promised our company, that whosoever could first descry her should have his chain of gold for his good news. It fortun'd that John Drake going up into the top, descried her about three of the clock, and about six of the clock we came to her and boarded her, and shot at her three pieces of ordnance, and struck down her mizen: and being entered, we found in he

¹ Royals (or reals) of plate = silver coins.

great riches, as jewels and precious stones, thirteen chests full of *royals* of plate, four score pound weight of gold, and six-and-twenty ton of silver. The place where we took this prize, was called Cape de San Francisco about 150 leagues from Panama.

The pilot's name of this ship was Francisco, and amongst other plate that our general found in this ship, he found two very fair gilt bowls of silver, which were the pilot's. To whom our general said, "Señor Pilot, you have here two silver cups, but I must needs have one of them," which the pilot because he could not otherwise choose, yielded unto, and gave the other to the steward of our general's ship.

When this pilot departed from us, his boy said thus unto our general: "Captain, our ship shall be called no more the *Cacafuego*, but the *Cacaplata*, and your ship shall be called the *Cacafuego*," which pretty speech of the pilot's boy ministered matter of laughter to us, both then and long after.¹

When our general had done what he would with this *Cacafuego*, he cast her off, and we went on our course still towards the west, and not long after met with a ship laden with linen cloth and fine china dishes of white earth, and great store of China silks, of all which things we took as we listed.

The owner himself of this ship was in her, who was a Spanish gentleman, from whom our general took a falcon of gold, with a great emerald in the breast thereof, and the pilot of the ship he took also with him, and so cast the ship off.

This pilot brought us to the haven of Guatulco,² the town whereof, as he told us, had but 17 Spaniards in it :

¹ See Exercise 43, p. 98.

² In Mexico.

As soon as we were entered this haven, we landed, and went presently to the town, and to the town-house, where we found a judge sitting in judgment, being associate with three other officers, upon three negroes that had conspired the burning of the town: both which judges and prisoners we took, and brought them a-shipboard, and caused the chief judge to write his letter to the town, to command all the townsmen to leave, that we might safely water there. Which being done, and they departed, we ransacked the town, and in one house we found a pot of the quantity of a bushel, full of reals of plate, which we brought to our ship. And here one Thomas Moon one of our company, took a Spanish gentleman as he was flying out of the town, and searching him, he found a chain of gold about him, and other jewels, which he took, and so let him go.

And while we were here, we espied a ship, and set sail after her, and took her, and found in her two pilots and a Spanish governor, going for the islands of the Philippines: we searched the ship, and took some of her merchandise, and so let her go.

Our general at this place and time, thinking himself both in respect of his private injuries received from the Spaniards, as also of their contempts and indignities offered to our country and Prince in general, sufficiently satisfied, and revenged: and supposing, that her Majesty at his return would rest contented with this service, purposed to continue no longer upon the Spanish coasts, but began to consider and to consult of the best way for his country.

He thought it not good to return by the straits for two special causes: the one, lest the Spaniards should there wait and attend for him in great number and

strength, whose hands, he being left but one ship could not possibly escape. The other cause was the dangerous situation of the mouth of the straits in the South sea, where continual storms reigning and blustering, as he found by experience, besides the shoals and sands upon the coast, he thought it not a good course to adventure that way: he resolv'd therefore to avoid these hazards and to go forward to the Islands of the Moluccas, and therehence to sail the course of the Portugals by the Cape Buena Esperanza (Good Hope). Upon this resolution, he began to think of his best way to the Moluccas, and finding himself where he now was, becalmed, he saw that of necessity he must be forced to take a Spanish course, namely, to sail somewhat northerly to get a wind. We therefore set sail, and sailed 600 leagues at the least for a good wind, and thus much we sailed from the 16th of April till the 3rd of June.

We shall have learnt from this extract that this time Drake's plan of attacking the Spaniards had been very successful, and no wonder he did not want to lose his ship now that she was laden with such a quantity of gold and silver and valuable merchandise. From the last paragraph we gather that Drake sailed as far northwards as California in North America, and as there were no Spaniards in that part of the country, he took possession of it and named it New Albion. He left here on October 13, and reached the Molucca Islands on November 14. He sailed to Java and then across the Indian Ocean, which he passed on June 18. On July 24 he left Sierra Leone, and arrived in England on November 3, 1580, nearly three years after he started.

We can perhaps imagine what excitement and rejoicing there was in Devon on his return, when it became known

what havoc he had wrought on Spanish towns and ships on the west coast of America. Although he had accomplished so much, and had made such fame, he could not rest at home ; but away he went to sea, always on the same errand. He fought as you all know against the great Spanish Armada in 1588, and then on January 18, 1596, he died while at sea, and his body, enclosed in a leaden coffin, was committed to the deep a few miles to seaward off Porto Bello.

“ England his heart, his corpse the waters have,
And that which raised his fame, became his grave.”

The following extract is taken from the return voyage of the *Elizabeth* after she was separated from Drake's vessel near the Straits of Magellan.

After that we had sight of an island lying within 3 degrees of the equinoctial, called the Isle of Fernando de Loronha. We crossed the equinoctial the 13 of April and had sight of the north star the 19 of the said month. The 1, 2, 3, 4 and 5 of May we sailed through the sea of weeds, about the space of 100 leagues, being under the tropic of Cancer. From whence we kept our course towards the north-east until we had the pole-star raised 47 degrees. The 22 of May we ran east-north-east. The 29 we sounded and had 70 fathoms, having the pole-star raised 51 degrees. The 30 of May we had sight of St. Ives, on the north side of Cornwall, and the 2 of June, 1579, we arrived at Ilfracombe in Devonshire.

EXERCISES

40. On a globe measure the distance from the Cape Verde Islands to the Coast of Brazil in latitude 33° S. How long did it take Drake's ships to go this distance? How far did they go on an average each day?

41. What additions to geographical knowledge were made by Drake?

42. What evidence is there in extract No. 6 that the Spaniards traded with China? What route would be used by these traders?

43. Cacafuego means "spit-fire." Cacaplata means "spit-silver." Try to explain the pilot-boy's remarks to Drake in extract No. 6.

44. In extract No. 1 we are told why ripe fruit is found growing in the Cape Verde Islands in January. Explain this in your own words. Is it right to say that there is a winter season in these islands?

45. Why are the Straits of Magellan so dangerous to navigators?

46. Could Drake have reached England by returning round South America without going through the Straits of Magellan? Why did he not return that way?

CHAPTER VIII

WALTER RALEGH—AN ENGLISHMAN

SIR WALTER RALEGH was a very famous Englishman in the days of Queen Elizabeth, and his name is still honoured by Englishmen everywhere. Like Drake and others, of whom we read in this book, he was a Devonshire man. He was born in 1552 near to the south coast of Devon, and from his boyhood days was acquainted with sailors and the sea. Unlike many boys of his day, however, he was extremely fond of reading, and thus he is distinguished from them, for he became a great scholar and an accomplished writer. He went to Oriel College, Oxford, and at the age of seventeen we find he was in France. He was probably there on St. Bartholomew's Day, August 24, 1572, when the Huguenots were massacred. On his return to England he went to the Queen's Court and quickly became a great favourite. We are told that he had a handsome figure and face, dark hair, bright complexion, an expression full of life, a stout heart, and a sound head. Such a man is sure to make enemies, and we know that he was constantly involved in quarrels with other courtiers, in some of which, no doubt, he was to blame. He was knighted in 1584 when he was thirty-two years of age, and although he was generally in the favour of the Queen, we find that sometimes she was much displeased with him.

One of the reasons why Raleigh is regarded with such honour by Englishmen is that he was one of the first men who thought of founding British Colonies across the seas,

and, being both learned and wealthy, he was in the position to try the experiment. We should always remember when speaking about our great empire that Raleigh was one of its founders. It was for this reason in 1918, on the three-hundredth anniversary of his death, that many speeches were made before the learned societies in several of our most important towns and cities in praise of his life and work. Between 1580 and 1590 he sent two expeditions to try and settle an English colony on the east coast of North America, in the district which is still called Virginia. These efforts were unsuccessful, but Raleigh ought not to be held responsible for the failure. The venture, we are told, cost him about £40,000, and although he lost so much money this did not damp his ardour, or prevent him from making further attempts, for he believed that it was the right thing to do. He did not accompany either of these two expeditions, and as far as we know never saw the coast of Virginia, but in 1595 he commanded an expedition to the north coast of South America.

He had heard and believed the report that if he sailed up the Orinoco River [find this on your map] he would come to a land that contained more gold and silver than the Spaniards had found in Peru and Mexico, and his object in this voyage was to explore this land, to take possession of it for England, and thus to make England a wealthy country like Spain. Leaving England on February 6, 1595, he sailed to the Canaries and thence to the island of Trinidad, near the mouth of the Orinoco, arriving there on March 22.

This is what he tells us about Trinidad.

1. The North part is very mountainous, the soil is very excellent and will bear sugar, ginger, or any other commodity that the Indies yield. It hath store of deer, wild porks, fruits, fish and fowl: it hath also for

bread sufficient maize, cassavi, and of those roots and fruits which are common everywhere in the West Indies. There is that abundance of stone pitch, that all the ships of the world may be therewith laden from thence, and we made trial of it in trimming our ships to be most excellent good, and it melteth not with the sun as the pitch of Norway, and therefore for ships trading the south parts very profitable.

From the island of Trinidad he crossed to the mouth of the Orinoco, where, leaving his ship in charge of part of the crew, he attempted to ascend the river in boats, taking with him about one hundred men.

This is Raleigh's description of the delta of the Orinoco.

2. The great river of Orinoco hath nine branches which fall out on the North side of his own main mouth: on the South side it hath seven others falling into the sea, so it debouches by sixteen arms in all, between islands and broken ground, but the islands are very great, many of them as big as the Isle of Wight, and bigger, and many less. From the first branch on the North to the last on the South it is at least 100 leagues.

Raleigh had engaged an Indian pilot to lead him into the main stream, and so he tells us—

3. This pilot promised to bring me into the great river Orinoco, but indeed of that (mouth) which he entered he was utterly ignorant, for he had not seen it in twelve years before: at which time he was very young, and of no judgment: and if God had not sent us another help, we might have wandered a whole year

in that labyrinth of rivers, ere we had found any way, either out or in, especially after we were past the ebbing and flowing, which was in four days, for I know all the earth doth not yield the like confluence of streams and branches, the one crossing the other so many times, and all so fair and large, and so like one to another, as no man can tell which to take: and if we went by the sun or compass, hoping thereby to go directly one way or other, yet that way we were also carried in a circle amongst multitudes of islands, and every island so bordered with high trees, as no man could see any farther than the breadth of the river or length of the breach.

Raleigh tells us the following about some of the people who lived in the delta of the Orinoco.

4. These are a very goodly people, and very valiant, and have the most manly speech and most deliberate that ever I heard. In the summer they have houses on the ground as in other places: in the winter they dwell upon the trees, where they build very artificial towns and villages: for between May and September the river Orinoco rises thirty feet, and then are those islands overflowed (flooded) twenty feet high above the level of the ground, saving some few raised grounds in the middle of them: and for this cause they are enforced to live in this manner.

In another place Raleigh tells us how the Spaniards obtained slaves from among these people living in the delta. He says—

5. Among many other trades, Spaniards used canoes to pass to the rivers which are on the south side of the

Orinoco, and there buy women and children from the cannibals, which are of that barbarous nature, as they will for three or four hatchets sell the sons and daughters of their own brethren and sisters, and for somewhat more even their own daughters. Hereof the Spaniards make great profit for buying a maid of twelve or thirteen years for three or four hatchets, they will sell them again in the West Indies for fifty and a hundred crowns.

Raleigh describes many very interesting things about this River Orinoco for which we have no space, and we must follow out the journey. He tell us in an extract already quoted that from May to September the river was in flood [it was the month of May when he was there], and when a great river is in flood its current is very rapid, and so it must have been extremely arduous work to row upstream as Raleigh was now doing. In fact, he says that he had the greatest difficulty in keeping the men at work day after day, and that is not to be wondered at when we remember that they were in a very hot country and that their provisions gave out, so that they were actually short of food.

6. When three days more were overgone, our companies began to despair, the weather being extreme hot, the river bordered with very high trees, that kept away the air, and the current against us every day stronger than the other: but so long we laboured, that many days were spent, and we driven to draw ourselves to harder allowance, our bread even at the last and no drink at all: and our men and ourselves so wearied and scorched, and doubtful withal, whether we should ever perform it or no, the heat increasing as we drew towards the line, for we were now in five degrees. The

farther we went on, we grew weaker and weaker when we had most need of strength and ability, for hourly the river ran more violently against us. On the banks of these rivers were divers sorts of fruits good to eat, flowers and trees of such variety as were sufficient to make ten volumes of herbs; we relieved ourselves many times with the fruits of the country and sometimes with fowl and fish. We saw birds of all colours, some carnation, some crimson, orange-tawny, purple, watchet, and of all other sorts both simple and mixed, and it was unto us a great good passing of the time to behold them, besides the relief we found by killing some store of them with our fowling pices: without which, having little or no bread, and less drink, but only the thick and troubled water of the river, we had been in a very hard case.

In spite of all these hardships these brave Englishmen struggled on, and near the end of May they reached the main stream of the Orinoco. But their troubles were by no means over, the current was still against them, and often their work was as hard as ever. Occasionally, however, they got some relief, for if you look at the map you will see that, having reached the main stream, they would be travelling in a westerly direction, and sometimes the wind helped them and they were able to hoist their sails, for the wind blows frequently from the east. In this way they travelled for nearly a month, and then Raleigh turned back without having actually found the gold and silver which he expected. This is what he tells us of this part of the journey.

7. I thought it time lost, to linger any longer in that place, especially for that the fury of the Orinoco began

daily to threaten us with dangers in our return : for no half-day passed but the river began to rage and overflow very fearfully, and the rains came down in terrible showers, and gusts in great abundance : and withal, our men began to cry out for want of shift, for no man had place to bestow any other apparel than that which he wore on his back, and that was thoroughly washed on his body for the most part ten times in one day : and we had now been well near a month, every day passing to the westward farther and farther from our ships. We therefore turned towards the east, and spent the rest of the time in discovering the river towards the sea, which we had not viewed. Passing down the stream we went without labour, and against the wind, little less than a hundred miles a day.

In a short time the travellers reached their ships and returned to England. Having arrived home, Raleigh wrote at great length of all he had seen and heard. Although he had not found the precious metals, he still believed that they were there, as he considered he had seen enough in the nature of the rocks of the mountains to indicate that they contained gold in abundance. The following extracts are also taken from Raleigh's account of this first voyage to Guiana.

8. But we have no time, means, nor season of the year to search those rivers for the causes aforesaid, the winter being come upon us, although the winter and summer as touching cold and heat differ not, neither do the trees ever sensibly lose their leaves, but have always fruit either ripe or green and most of them both blossoms, leaves, ripe fruit and green at one time : but their winter only consisteth of terrible rains, and over-

flowing of the rivers, with many great storms and gusts, thunder and lightnings of which we had our fill, ere we returned.

This is part of Raleigh's argument in favour of settling a colony in this part of South America.

9. Where there is store of gold it is in effect needless to remember other commodities for trade : but it hath towards the south part of the river great quantities of Brazil-wood, and diverse berries that dye a most perfect crimson and carnation : and for painting, all France, Italy, or the East Indies yield none such. All places yield abundance of cotton, of silk, of balsam and of those kinds most excellent, and never known in Europe, of all sorts of gums, of Indian pepper, and what else the countries may afford within the land we know not, neither had we time to abide the trial and search. The soil besides is so excellent and so full of rivers, as it will carry sugar, ginger, and all those other commodities which the West Indies have.

The navigation is short, for it may be sailed with an ordinary wind in six weeks, and in the like time back again, and by the way neither lee shore, enemies' coast, rocks nor sands, all which in the voyage to the West Indies, and all other places we are subject unto, as the channel of Bahama, coming from the West Indies, cannot well be passed in the winter, and when it is at the best, it is a perilous and fearful place. The rest of the Indies for calms and diseases very troublesome, and the sea about the Bermudas a hellish sea for thunder, lightning, and storms.

This very year (1595) there were seventeen sail of Spanish ships lost in the channel of Bahama. And so

it falleth out in that navigation every year for the most part, which in this voyage are not to be feared: for the time of year to leave England is best in July, and the summer in Guiana is in October, November, December, January, February, and March, and then the ships may depart thence in April, and so return again into England in June, so as they shall never be subject to winter weather, either coming going or staying there: which for my part, I take to be one of the greatest comforts and encouragements that can be thought on, having (as I have done) tasted in this voyage by the West Indies so many calms, so much heat, such outrageous gusts, foul weather, and contrary winds.

There is therefore great difference between the easiness of the conquest of Guiana, and the defence of it being conquered, and the East or West Indies. Guiana hath but one entrance by the sea for any vessels of burden: so as whoever shall first possess it, it shall be found inaccessible for any enemy, except he come in wherries, barges or canoes, or else in flat-bottomed boats, and if he do offer to enter it in that manner, the woods are so thick two hundred miles together upon the rivers of such entrance, as a mouse cannot sit in a boat unhit from the bank. By land it is more impossible to approach, for it hath the strongest situation of any region under the sun and is so environed with impassable mountains on every side, as it is impossible to victual any company in the passage.

In the following year, 1596, Raleigh sent out a second expedition to Guiana. He did not go, but the same effort was made—namely, to proceed up the Orinoco in boats and discover, if possible, if it were really true that this land con-

tained all the wealth that was ascribed to it. As on the first expedition nothing was proved, and so the journey ended unsuccessfully.

The following extracts were written by the leader of the expedition, and you will learn from them the way he went and how he and his comrades fared.

10. Sunday, the 26th of January, in the year of our Lord 1596, we departed from Portland in the *Darling of London*, having in company the *Discoverer*, a small pinnace, whom we lost at sea in foul weather, the Thursday next following. Friday the 13th of February, we fell in with the Canary Islands, where we expected our pinnace, according to our appointment, seven or eight days. Here we took two boats, the one a passenger, we sank, the other we towed at our ship stern, steering south-south-west for the islands of Cape Verde. Therehence we set sail the 28 of February, keeping a west-south-west course. In this passage we found very smooth seas, fair weather, and steady winds, blowing ordinarily between the east and north-east points. The 12 of March we sounded and had sandy ground in 47 fathom. Sunday the 14, towards night, about some six leagues from the shore, we descried a low land in the bottom of a bay. From the 9 of March until this time, we kept for the most part a south-south-west course. The water in this place is smooth, but muddy, and the colour red or tawny. From the westernmost of the Cape Verde Islands unto this bay I do estimate the distance to be near 550 league. The first place wherein we anchored was in the mouth of the Arrowari, a fair and great river. It standeth in one degree and forty minutes, for we fell so far to the southward by your lordship's direction.

II. When we were ready to depart he (the pilot) demanded whether we wanted any of the wood that is usually carried from these parts to Trinidad in canoes, and is there sold to the French for trade ; he offered, if we would bring our ship near his port, to put in her lading thereof. But because most of our casks were not iron-bound, and in making stowage way to remove it, would have been the loss of our cider and other drink ; I therefore referred the taking of any quantity to fitter opportunity, thinking it sufficient at this time to have only my boats lading thereof, which afterwards in extremity of foul weather, before we could get aboard our ship, we were enforced in a dark night to heave all overboard : thinking ourselves happy, to have recovered thither at seven days' end with safety of life only. All which time we could no where set foot on shore, but rested day and night wet and weatherbeaten in our coverless boat, which was sometimes ready to sink under us. For we had in this place without comparison more rain, wind, and gusts than elsewhere at any time. To be brief, my men became weak and sick, and if we had stayed any longer time out, I doubt whether the greatest part of us had ever come aboard again. I afterwards understood from my Indian pilot that this weather is for most part of the year usual. The only season wherein little rain doth fall there is at our Winter Solstice. The mother-wind of this coast is for the most part to the northward of the east, except when the sun is on this side of the equinoctial, for then it often veers southerly, but most in the night.

Raleigh sent a third expedition towards the end of the same year, 1596. Now it is interesting for us to notice that

Raleigh himself tells us (extract No. 9) that he considered July the best month in which to sail from England, for then the heavy rains and flooded rivers would not be encountered.

This third expedition sailed from London on October 14, and arrived in Guiana on February 27. They started back for England on May 6, and reached Plymouth on June 28; so that they spent the months of March and April on the Orinoco. Consequently they were not there in the rainy season, and did not suffer as the men on the previous expeditions had done, as we can gather from the following account written by a gentleman, Thomas Masham, who was one of the voyagers.

12. Now I think it not amiss to speak something of this country. And first touching the climate: though it stands within the tropics, and something near to the equinoctial, so that the sun is twice a year over their heads and never far from them, yet it is temperate enough in those parts. For besides that we lost not a man upon the coast, one that was sick before he came there, was nothing sicker for being there, but came home safe, thanks be to God. And for my own part, I was never better in body in all my life, and in like sort fared it with the rest of the company: for indeed it is not so extreme hot as many imagine.

For bread there is infinite store of cassavi, which is as good bread as a man need to eat, and better than we can carry any thither. We spent not a bit of our own all the while we were upon the coast. It is made of a root so called: which they take and scrape, and crush all the juice out, being poison: and when it is dry it is as fine flour as our white meal maketh: which dry as it is without any moisture, they strew upon a round stone, having a still fire under it, and so it congealeth to a

cake: and when it cometh new off, it eateth like to our new white bread.

Raleigh's ideas were never realised. He had great plans and far-reaching schemes to make England a greater country than she was. Perhaps it is better that England did not leap to greatness in a short time. Her greatness came only slowly. Many attempts were made and many failures had to be faced before the British Empire was firmly established in distant parts of the world. Raleigh was a disappointed man. He had spent his fortune, and we have seen what a brave leader he was when he led his men up the Orinoco in storm and flood. He had many enemies, and as is told us in our history books, finally he was beheaded in the Tower of London.

EXERCISES

47. In extract No. 10 we are told that the distance from the Cape Verde Islands to the coast of South America in latitude 1° north of the Equator is 550 leagues. Is this right? Check by measuring on a globe. An English league is three miles.

48. Find out from extract No. 1 what products Trinidad yielded in Raleigh's time. What is stone-pitch? You will find its common name in any modern geography book on Trinidad.

49. In what months of the year are there heavy rains in the valley of the Orinoco? (See extracts Nos. 4 and 8.) Is the Orinoco north or south of the Equator? Would you call these summer rains or winter rains?

50. Compare the time of the year when the heavy rains fall in Guiana and India. Note the latitude of these two places. Make a statement about the rainfall of these two countries.

51. Prove from one of the extracts given that the Spaniards were slave-dealers.

52. Write down in your own words Raleigh's arguments in favour of Guiana as a suitable place for an English colony.

53. Describe in your own words the vegetation on the banks of the Orinoco.

54. Describe how the natives of Guiana prepared their bread from the cassava.

CHAPTER IX

JENKINSON AND OTHERS

WE have now covered about 300 years in the story of the discovery of the earth's surface, but by no means have we exhausted the list of brave and daring explorers. There are many more who had done deeds as daring as any of which we have already learnt, but we have not space to deal with all of them. So, here, just short explanations and some extracts from the records of a few of them is all that we can attempt.

If you look at a globe or a map of the world, you will see that all the explorers of whom we have read came from Western Europe, and that their travels took them to nearly all parts of the world, but we have not read of anyone who journeyed to the north of Europe along the coast of Norway. We must not conclude that no one had attempted this voyage. As a matter of fact, in the year 1553 an expedition was sent from England round the north of Norway with the object of finding a route to Cathay. You will know now why so many of the European nations were trying to find routes to this rich land. This expedition was in charge of two men named Chancellor and Willoughby, the latter being never heard of again; but Chancellor reached the north coast of Russia, or Muscovy as it was called in those days.

I. ANTHONY JENKINSON

The sea passage to Cathay was not found, but trade between England and Russia was established, and the

following extract is taken from a voyage by one of the traders. His name was Anthony Jenkinson, and this voyage was made in the year 1557. You should read it carefully and trace it on a map.

First by the grace of God, the day and year above mentioned, I departed from the said city, and the same day at Gravesend embarked myself in a good ship named the *Primrose*, being appointed, although unworthy, chief captain of the same and also of the other three good ships, the *John Evangelist*, the *Anne* and the *Trinity*. And thus our four tall ships being well appointed as well for men as victuals as other necessary furniture, the said twelfth day of the month of May, we weighed our anchors, and departed from the said Gravesend, in the afternoon, and plying down the Thames, the wind being easterly, and fair weather, the 13 day we came aground with the *Primrose* upon a sand bank, where we sat fast until the 14 day in the morning and then God be praised, she came off. That day we came to an anchor, the wind being easterly and there remained until the 20 day: then we weighed and came into Orwel wands, but the *Trinity* came on ground on certain rocks, and was like to be lost. The 21 day the *Primrose* remaining at an anchor in the wands, the other three ships bare into Orwel haven, where I caused the said *Trinity* to be grounded, searched and repaired. So we remained in the said haven until the 28 day: and then the wind being westerly the three ships weighed and came forth, and in coming forth the *John Evangelist* came on ground upon a sand, where she remained one tide and the next full sea she came off again without any great hurt.

The 29 day in the morning all four ships weighed and that tide went as far as Orfordness. Then we wended North and by West until the first of June then it waxed calm and continued so until the second day at noon. The 10 day the wind came to the north-north-west, and we were forced to bear roomer with¹ Flamborough Head where we came to an anchor, and there remained until the 17 day. Then the wind came fair and we weighed, and set our course North and by East and so continued the same with a merry wind until the 21 at noon, at which time we took the sun and had the latitude in 60 degrees. Then we shifted our course and went north-north-east until the 25 day. Then we discovered certain islands lying from us north-east being in the latitude 66 degrees 40 minutes. Then we went north and by west, because we would not come too nigh the land, and running that course four hours, we discovered and had sight of Rost Islands. Thus continuing our course along the coast of Norway, the 27 day we took the sun, being as far shot as Lofoden and had the latitude in 69 degrees. And the same day in the afternoon appeared over our heads a rainbow, like a semicircle, with both ends upward. Note that there is between the said Rost Islands and Lofoden, a whirlpool called Malestrand, which from half ebb until half flood maketh a terrible noise. Also if there cometh any whale within the current of the same, they make a pitiful cry. Moreover, if great trees be carried into it by force of streams, and after with the ebb be cast out again, the ends and boughs of them have been so beaten, that they are like the stalks of hemp that is bruised. Note that all the coast of

¹ This probably means to get in under.

Finmark is high mountains and hills, being covered all the year with snow. And hard aboard the shore of this coast, there is 100 or 150 fathoms of water in depth. Thus proceeding and sailing forward, we fell with an island called Zenam, being in the latitude of 70 degrees. About this island we saw many whales, very monstrous, about our ships, some by estimation of 60 foot long.

Thus plying along the coast we fell with a cape, called the North Cape which is the northernmost land that we pass in our voyage to S. Nicholas, and is in the latitude of 71 degrees and 10 minutes. And being at this North Cape, the second day of July, we had the sun at north 4 degrees above the horizon. The third day we came to Wardhouse,¹ having such mists that we could not see the land. This Wardhouse is a castle standing in an island 2 miles from the main of Finland, subject to the King of Denmark. From Wardhouse we sailed south-south-east ten leagues and fell with a cape, the northernmost part of the land of Lapland. Note that the 6 day we passed by the place where Sir Hugh Willoughby, with all his company perished.

The land of Lapland is a high land having snow lying on it commonly all the year. The people live in the summer time near the sea side, and use to take fish, of the which they make bread, and in the winter they remove up into the country into the woods, where they use hunting, and kill deer, bears, wolves, foxes and other beasts, with whose flesh they be nourished, and with their skins apparelled in such strange fashion, that there is nothing seen of them but their eyes.

¹ See page 79.

They have none other habitation, but only in tents, removing from place to place, according to the season of the year. Thus proceeding along the coast, the 9 day of July we came to Cape Grace being in the latitude of 66 degrees and 45 minutes and is at the entering in of the Bay of S. Nicholas.

II. SIR JOHN HAWKINS

Sir John Hawkins was a famous English seaman at the same time as Drake. They sailed together on more than one occasion.

The Spaniards would not allow other nations to engage in trade with their possessions, and it was Hawkins' endeavour to carry on trade between England and Spanish America.

Here are two extracts from the record of his voyages. The first is very interesting because it tells us so much about the natives who lived on the west coast of Africa, and the second one is taken from his third voyage to the Indies. It was on this occasion that the Spaniards treated him and Drake, who was accompanying him, so badly that Drake vowed to have his revenge, and how he took his revenge we have already learnt in Chapter VII.

EXTRACT FROM HIS SECOND VOYAGE TO THE WEST INDIES

I. Master John Hawkins with the *Jesus of Lubeck*, the *Salomon*, the *Tiger*, and the *Swallow*, being all well furnished with men to the number of one hundred three score and ten as also with ordnance and victual requisite for such a voyage, departed out of Plymouth the 18 day of October, in the year of our Lord 1564

with a prosperous wind. And after their setting out ten leagues to the sea, he met the same day with the *Minion* a ship of the Queens Majesty, and also her consort the *John Baptist* of London being bound to Guinea also, who hailed one the other after the custom of the sea with certain pieces of ordnance for joy of their meeting: which done the *Minion* departed from him to seek her other consort the *Merlin* of London, which was astern out of sight, leaving in M. Hawkins company the *John Baptist*.

Thus sailing forwards on their way with a prosperous wind until the 21 of the same month, at that time a great storm arose, the wind being at north-east about nine a clock in the night, and continued so 23 hours together, in which storm M. Hawkins lost the company of the *John Baptist* and of the *Swallow*, his other three ships being sore beaten with the storm. The 23 day the *Swallow* to his no small rejoicing, came to him again in the night, 10 leagues to the northward of Cape Finisterre. The 25 the wind continuing contrary he put into a place in Galicia called Ferrol, where he remained five days.

The 26 day the *Minion* came in also where he was. The 30 day of the month M. Hawkins with his consorts and company of the *Minion* weighed anchor and set sail on their voyage, having a prosperous wind thereunto. The 4 of November they had sight of the island of Madeira and the 6 day of Teneriffe. About these islands are certain flitting islands, which have been oftentimes seen, and when men approached near them they vanished: and therefore it should seem that he is not yet born to whom God hath appointed the finding of them. In this island of Teneriffe there is a . .

hill called The Pike, having both winter and summer abundance of snow on the top of it.

The 15 of November at night we departed from Teneriffe. The 20, the ship's pinnace with two men in her, sailing by the ship, was overthrown by the oversight of them that went in her, the wind being so great, that before they were espied and the ship had cast about for them, she was driven half a league to leeward of the pinnace, and had lost sight of her so that there was small hope of recovery, had not God's help and the Captain's diligence been, who having well marked which way the pinnace was by the sun, appointed 24 of the lustiest rowers in the great boat to row to the windward, and so recovered, contrary to all men's expectations, both the pinnace and the men sitting upon the keel.

The 25 we came to Cape Blanco, departed on the 26, and the 29 came to Cape Verde which lieth in $14\frac{1}{2}$ degrees. The 10 of December we had a north-east wind with rain and storm, which weather continuing two days together, was the occasion that the *Salomon* and *Tiger* lost our company: for whereas the *Jesus* and pinnace anchored at one of the islands called Sambula, the 12 day, the *Salomon* and *Tiger* came not thither until the 14. In this island we stayed certain days going every day on shore to take the inhabitants, with burning and spoiling their towns. In this island of Sambula we found about 50 boats or canoes, which are made of one piece of wood, digged out like a trough but of a good proportion, being about 8 yards long and 1 in breadth, having a beakhead and a stern very proportionably made, and on the one side artificially carved, and painted red and blue. They are able to

carry twenty or thirty men. In these canoes they row standing upright, with an oar somewhat longer than a man, the end whereof is made about the breadth and length of a man's hand of the largest sort. They row very swift, and in some of them four rowers and one to steer make as much way, as a pair of oars in the Thames of London.

Their towns are prettyly divided with a main street at the entering in, which goeth through their town, and another overthwart street, which maketh their town crossways: their houses are built in a rank very orderly in the face of the street, and they are made round like a dovecot, with stakes set full of Palmito leaves instead of a wall: they are not much more than a fathom large, and two of height, and thatched with Palmito leaves very close, other some with reeds, and over the roof thereof there is a round bundle of reeds: in the inner part they make a loft of sticks whereupon they lay all their provisions: a place they reserve at the entrance for the kitchen, and the place they lie in is divided with certain mats artificially made with the rind of Palmito trees; their bedsteads are of small staves laid along, and raised a foot from the ground, upon which is laid a mat, and another upon them when they like: for other covering they have none.

They take order in gathering of the fruits of the season of the year, and also of Palmito wine, which is gathered by a hole cut in the top of a tree, and a gourd set for the receiving thereof, which falleth in by drops, and yieldeth fresh wine again within a month.

In this island we sojourned unto the 21 December, where having taken certain negroes and as much of their fruits, rice, and millet as we could well carry

away, we departed. The 29 of January we departed with all our ships from Sierra Leone, towards the West Indies, and for the space of 18 days, we were becalmed, having now and then contrary winds and some tornadoes, amongst the same calm, which happened to us very ill, being but reasonably watered for so great a company of Negroes and our selves, which pinched us all, and that which was worst, put us in such fear that many never thought to have reached the Indies without great death of negroes and of themselves: but the Almighty God sent us the 16 of February the ordinary breeze, which is the north-east wind, which never left us, till we came to an island of the cannibals called Dominica, where we arrived the 9 of March upon a Saturday. The cannibals of that island and also others adjacent are the most desperate warriors that are in the Indies, by the Spaniards' report, who are never able to conquer them, and they are molested by them not a little.

EXTRACT FROM HAWKINS' THIRD VOYAGE

2. At Cartagena the last town we thought to have seen on the coast, we could by no means obtain to deal with any Spaniard, the governor was so straight, and because our trade was so near finished we thought not good either to adventure any landing or to detract further time, but in peace departed from thence the 24 of July hoping to have escaped the time of their storms which then soon after began to reign, the which they call Furicanos, but passing by the west end of Cuba, towards the coast of Florida there happened to us the 12 day of August an extreme storm which continued

by the space of four days, which so beat the *Jesus*, that we cut down all her higher buildings, her rudder also was sore shaken, and withal was in so extreme a leak that we were rather upon the point to leave her than to keep her any longer, yet hoping to bring all to good pass we sought the coast of Florida, where we found no place nor haven for our ships because of the shallowness of the coast: thus being in great despair and taken with a new storm which continued other three days we were enforced to take for our succour the port which serveth the city of Mexico called St. John de Ullua, which standeth in 19 degrees.

III. HENRY HAWKS

Henry Hawks was an English merchant. We do not know much about him, except that he lived in Mexico for five years. He must have been a brave man, for Mexico was not a safe place for an Englishman. However, he evidently came home to England quite safely, for he has written an excellent account of the country as it was when he lived there. He wrote this account in 1572:

Saint John de Ullua is an island not high above the water where the Spaniards are now making a strong fort. In this place all the ships that come out of Spain with goods for these parts do unlade, for they have none other port so good as this is. In these places the north wind hath so great dominion, that oftentimes it destroyeth many ships and barks. This place is given to great sickness.

Five leagues from S. John de Ullua is a faire river, and goeth to a small town of the Spaniards called Vera Cruz and with small vessels, which they call frigates,

they carry all their merchandise which cometh out of Spain to the said town: and in like manner bring all the gold, silver, cochineal, hides and all other things that the ships carry into Spain unto them. And the goods they then carry to Mexico and divers other places so far within the country that some of them are 700 miles off, and some more and some less, all upon horses, mules, and in wains drawn with oxen and in cars drawn with mules.

This town is inclined to many kinds of diseases by reason of the great heat, and a certain gnat or fly which they call a mosquito, which biteth both men and women in their sleep: and as soon as they are bitten the flesh swelleth as though they had been bitten with some enormous worm. And this mosquito or gnat doth most follow such as are newly come into the country. Many there are that die of this annoyance.

This hot or sick country continueth five and forty miles towards the city of Mexico: and the five and forty miles being passed, then there is a temperate country and full of tillage: but they water all their corn with rivers which they turn in upon it. And they gather their wheat twice a year. And if they should not water the ground where their corn is sown, the country is so hot it would burn all.

Mexico is a great city: it hath more than fifty thousand households, whereof there are not past five or six thousand houses of Spaniards: all the other are the people of the country. There are in this city stately buildings, and many monasteries of friars and nuns, which the Spaniards have made. And the buildings of the Indians are somewhat beautiful outwardly, and within full of small chambers, with very small

windows, which are not so comely as the buildings of the Spaniards.

This city standeth in the midst of a great lake, and the water goeth through all or the most part of the streets, and there come small boats, which they call canoes, and in them they bring all things necessary, as wood, and coal, and grass for their horses, stones and lime to build, and corn.

This city is subject to many earthquakes, which oftentimes cast down houses, and kill people. This city is very well provided of water to drink, and with all manner of victuals, as fruit, flesh and fish, bread, hens and capons, Guinea cocks and hens, and all other fowl. There are in this city every week three fairs or markets, which are frequented with many people, as well Spaniards as the people of the country. Many rivers fall into this lake which the city standeth in: but there was never any place found whither it goeth out. The Indians know a way to drown the city, and within these three years they would have practised the same for the Indians love not the Spaniards. Round about the town there are very many gardens and orchards of the fruits of the country.

Towards the north from Mexico there are great store of silver mines. There is greater quantity of silver found in these mines than there is in any other parts; and as the most men of experience said always they find the richer mines the more northerly. In this country there are also mines of gold, and now in these days there is not so much gold found as there hath been here-to-fore. There is a great number of beasts or kine in the country, which were never brought thither by the Spaniards. They are like unto our oxen,

saving that they have long hair like a lion, and short horns, and they have upon their shoulders a bunch like a camel, which is higher than the rest of their body. They are marvelous wild and swift in running.

There are in the country mighty high mountains and snow upon them: they commonly burn: and twice every day they cast out much smoke and ashes at certain open places, which are in the tops of them.

There is rain usually in this country, from the month of May to the midst of October, every day, which time they call their winter, by reason of the said waters. And if it were not for the waters which fall in these hot seasons, their maize, which is the greatest part of their sustenance would be destroyed. This maize is the greatest maintenance which the Indian hath, and also all the common people of the Spaniards. And their horses and mules which labour, cannot be without the same. If the miners should be without it, they could not labour the mines: for all their servants eat none other bread, but only of this maize, and it is made in cakes, as they make oaten cakes, in some places of England.

The walls of the houses of the Indians are but plain, but the stones are laid so close, that you shall not well perceive the joints between one stone and another, they are so finely cut: and by the means that the stones are so workmanly done, and finely joined together there is some beauty in their walls. They make their doors very little, so that there can go in but one man at a time. Their windows and rooms within their houses are small. They eat their meat upon the ground, and sleep on the ground upon a mat without any bed. The Indians strike their fire with one stick

in another, as well the tame people as the wild. For they know not how to do it with an iron and a stone.

IV. SIR THOMAS CAVENDISH

Sir Thomas Cavendish, of Trimley, Suffolk, made a celebrated voyage round the world in two years, 1586-88. The following extract is taken from the account of that voyage, written by Francis Pretty who accompanied him, and relates to the latter part of their voyage :

The 20th of June having taken in wood and water, and refreshed ourselves with such things as we found there (Island of St. Helena) and made clean our ship, we set sail about eight of the clock in the night toward England. At our setting sail we had the wind at southeast and we haled away northwest. The wind is commonly off the shore at this island of St. Helena.

On Wednesday being the third day of July we went away northwest the wind being still at southeast, at which time we were in 2 degrees to the southward of the equinoctial line.

The 12 day of the said month of July it was very little wind, and toward night it was calm and blew no wind at all, and so continued until it was Monday being the 15 day of July.

We found the wind continually to blow at east and northeast after we were in 4 degrees to the northward : and it altered not until we came between 30 and 40 degrees to the northward of the equinoctial line. On Wednesday the 21 day of August the wind came up at southwest a fair gale : by which day at noon we were in 38 degrees of northerly latitude. On Friday in the morning being the 23 day of August at four of the

clock we haled east and east by south for the northernmost island of the Azores.

On Saturday the 24 day of the said month by five of the clock in the morning we fell in sight of the two islands of Flores and Corvo standing in $39\frac{1}{2}$ degrees and sailed away northeast. The 9 of September, after a terrible tempest which carried away most part of our sails, by the merciful providence of the Almighty, we recovered our long-wished port of Plymouth in England, from whence we set forth at the beginning of our voyage.

V. LOPEZ VAZ

Extract from "A Discourse of the West Indies and South Seas, written by Lopez Vaz, a Portuguese, which was intercepted, with the author thereof, at the River Plate by Captain Withrington and Captain Lister in the year 1586."

Also here is to be noted that it is colder to the Southward of the line than to the Northward: in such wise, that in forty degrees to the Southward the cold is more sharp than in fifty degrees to the North: experience doth always shew the same: for it is as cold even in the Straits of Magellan, as it is in sixty degrees of Northerly latitude. Howbeit the cold is not the cause why navigators frequent not the same, but the Westerly winds which blow most furiously on that coast, and oftentimes out of the very mouth of the straits and so continue for the most part of the year. Also there runneth sometimes such a strong current, that if the wind and it go all one way, the cables cannot hold, neither can the ship withstand the force thereof. For which cause, and also for that there is no harbour, till you be passed

30 leagues into the said straits, most part of the ships that have gone thither have indured many troubles before they could come to the straits, and being come to the mouth thereof they have been hindered by the current and wind and so have been put back again.

VI. SOME SPANISH SAILING INSTRUCTIONS

The following extracts are taken from the instructions that were issued to Spanish captains in navigating the Atlantic Ocean to and from the West Indies, about the close of the sixteenth century :

1. I advise thee, that when thou art come out of the Bahama Channel, thou shalt be in 28 degrees. And if it be in summer, thou shalt go north-east until thou be in $39\frac{1}{2}$ degrees, which is the height of Flores : and thou shalt go to the northward of Bermuda. And if thou think good to go in more degrees, to have the sea winds, thou shalt go by the same height, as I have said : and if thou shalt find the wind off the sea, thou hast no need to go in more height : and from thence thou shalt go east and by south : and thou must go thus because of the variation of the compass. And thus thou shalt find the Isle of Flores, which stands in $39\frac{1}{2}$ degrees.

I advise thee, if in the winter time thou be shot out of the Bahama Channel and wouldst go for Spain, that thou must go east-north-east until thou be in 30 degrees rather less than more, and then thou mayest go east and by south, because of the variation of the compass. And steering hence east south east, thou shalt go on the south side of Bermuda : and must go with great care, because many have been lost here about this island, because of their negligence. And

when thou art sure thou art past this island, then go east-north-east, until thou be in the height of 37 degrees, which is in the height of the island of Saint Marie. And going thus, and not seeing land, but seeing the sea to break, make account it is the rocks called las Hormigas. And if thou think good to go to Fayal thou shalt go till thou be in $38\frac{1}{2}$ degrees, and then thou shalt go east, and so shalt have sight of Fayal.

2. If a man depart from the bar of Saint Lucar in Summer time, he must steer south-west until he hath sight of Punta de Naga, which is in the isle of Teneriffe. The marks to know it be these. A high point sloping to the sea, and at the east point it hath two down falls like partitions, and they show to be separated from the main of the island and stand in $28\frac{1}{2}$ degrees. And if thou wilt have sight of the Grand Canary and find thyself at Punta de Naga thou shalt then steer southwest and by south, and so thou shalt have sight of Canary which standeth in 28 degrees. And thou must come to anchor on the southeast side of the island. But I advise thee, if it be in winter time, that thou keep another course and that as followeth.

Departing from Saint Lucar in winter thou shalt go along the coast until thou be as high as Cape Cantin, which is a low flat cape with the sea, because if thou go far from the coast thou shalt meet with the wind off the sea. And thou shalt see a great wood before thou come to this cape called Casa del Cavallero. And from thence thou shalt steer thy old course that is South west and by South and so thou shalt see the Grand Canary which is a round high land and standeth in 28 degrees.

EXERCISES

55. Of what use was the palmito tree to the people who lived in West Africa?

56. What was the principal article of trade that Sir John Hawkins carried to the Indies? How and where did he get his cargo? What do you think he received in exchange?

57. There is a large population to-day of African negroes in the West Indies and Central America. Can you account for this?

58. Hawks tells us that Vera Cruz is a very unhealthy place. What does he say was the cause of this unhealthiness? Try to find out whether he was right. [For two years before the Americans began to cut the Panama Canal they were at work making the isthmus healthy. If you read an account of the cutting of the canal, you will discover what diseases they were stamping out, what caused these diseases, and the methods the Americans used.]

59. Hawks says that the Indians in Mexico made fire from two sticks. How did they do it? Do you know of any other people who produce fire in the same way? Where did they live? How did he say he made fire?

60. What evidence is there that the people of Mexico practised the art of irrigation?

61. Compare the people of Lapland with the people of North-east America, as described by Frobisher.

CHAPTER X

MISCELLANEOUS EXERCISES

62. On pages 44, 74, 75, 97, you will find the "pole star" mentioned. Read the sentences carefully, and have a map of the world in front of you. [As long as you remain at any one place the pole star always appears in the same place in the sky at night, and the other stars seem to move round it. The pole star can only be seen in the Northern Hemisphere. If you lived in London you would always find that this star is $51\frac{1}{2}^{\circ}$ above the northern horizon; if you were at the North Pole, the pole star would be exactly overhead, or 90° above the horizon, and if you were at the Equator, and could see the pole star, you would find it just on the northern horizon—*i.e.*, 0° above the horizon. Now the latitude of London is $51\frac{1}{2}^{\circ}$, the latitude of the North Pole is 90° , and the latitude of the Equator is 0° .]

Find the latitude in which the traveller was in each of the extracts mentioned. Does the latitude thus found seem to agree with his position as described? In the extract on page 97 was the ship sailing from the Southern to the Northern Hemisphere, or from the Northern to the Southern?

63. Columbus in his voyage gives as a reason for not going farther south that he "discovered a very great change in the sky and stars." Explain where he was at this time and what he meant. Why was this a good reason?

64. On pages 44, 50, 87, 88, you will find descriptions

of the weather experienced by the early voyagers in the neighbourhood of the Equator. Read these carefully, and then make a table like the following and fill it up.

Name of Voyager.	Date of Voyage: Month and Year.	Weather Experienced.
1.		
2.		
3.		
4.		

Were the experiences of these men similar? What kind of weather would you expect if you were in the Equatorial region? Examine any maps of the Atlantic Ocean in your atlas, and see if any marks or words on them support what these travellers have written.

65. On page 126 you will find the account of a voyage in the year 1588 from St. Helena, an island in the South Atlantic Ocean, to England.

(a) Trace a map of the Atlantic Ocean, marking St. Helena, the Azores, Plymouth, and the lines of latitude 20° and 10° S., the Equator, and 10° , 20° , 30° , 40° , 50° N. Draw a line in a north-west direction from St. Helena to 4° N. of the equator. Mark a point on this line 2° S. of the equator. Join the northern end of this line to the Azores, and then draw a line from the Azores to Plymouth. This line marks approximately the route taken in this voyage. On the same map mark with arrows the direction in which the wind was blowing, as the extract tells you at different places during the voyage. [The arrows should fly with the wind.] Look at a map in your atlas showing the winds blowing over the Atlantic Ocean. Do the directions of your arrows agree with those given in the atlas?

(b) On the route you have drawn on the map mark

St. Helena with letter A; the point 2° S. of the equator, B; the point 4° N., C; the Azores, D; and Plymouth, E. By the side of these letters enter the date when the ship was at each of these places.

Copy the following table into your exercise book and work the arithmetic needed to complete it :

	Distance in Miles.	No. of Days Sailing.	Average Distance sailed each Day.
A to B	1,300		
B to C	490		
C to D	2,430		
D to E	1,400		

Enter the rates from the fourth column on your map in their proper places.

In which part of the voyage was the speed the greatest? the least? Can you explain why there was this difference?

Why was the speed greater from D to E than from C to D? Try to remember the rate at which this sailing vessel in the sixteenth century crossed the ocean when the wind was favourable. Find the rate at which an Atlantic liner of to-day crosses from England to America. On a fast steamer it takes five days. Measure the distance on a globe (see Exercise No. 5).

(c) Trace another blank map of the Atlantic Ocean, and put in from memory the wind directions over the part of the ocean through which this vessel sailed.

66. Trace a map of the Atlantic Ocean from the Equator to 40° N. latitude. Mark on it the Madeira, Canary, Cape Verde, Trinidad, and the West India Islands. Trace the journey of Columbus on his third voyage to the Indies, as described on page 43. Mark the place where he was becalmed, and put an arrow in the direction of the wind that carried him from this place to Trinidad.

Find the total distance from Spain to Trinidad by this route. What was his average rate in miles per day?

On the same map mark his route on his first voyage and put an arrow in the direction of the wind.

67. Read the extract on page 97. On a blank map of the Atlantic Ocean mark the route. It is better to begin with the end of the voyage. That is, put a dot in latitude 51° near the entrance of the Bristol Channel and draw a line west-south-west to latitude 47° . This will give you a point in longitude 19° W. From here draw a line to the south-west to about 2° north of the tropic of Cancer. This will take you to longitude 47° W. Draw a short line, north and south, to about 2° south of the tropic. [The extract does not give us enough detail to put this in very accurately.] Then from this line draw a line to the Equator in longitude 34° W. Measure the lengths of these lines on a globe, and hence calculate the actual distances in miles. Your figures should be something like the following: From the Equator to the sea of weeds, 1,730 miles; across the sea of weeds, 300 miles; from the sea of weeds to 47° N., 2,080 miles; and from there to the entrance to the Bristol Channel, 700 miles.

Find the average rate in each part of the voyage and account for the differences. Put arrows in the direction in which you think the wind would blow, and compare your results with Exercise No. 65.

68. How many miles is it from (a) the mouth of the Thames to latitude 60° N., (b) from latitude 60° N. to the North Cape, along the coast of Norway? [You can find these distances from a map of Europe, maps of the British Isles and Scandinavia, and from a globe. Take the mean of the three.] Find how many days it took Jenkinson to sail these two distances, and the average rate per day. Can you account for the difference?

69. What were the difficulties and dangers, as can be

gathered from Jenkinson's voyage, in sailing from London to the North of Scotland? Are sailors exposed to the same dangers in making the voyage at the present time? If not, how do you think the dangers have been overcome?

70. Read Cartier's description of wintering in the St. Lawrence River. Look at a map of the world, and notice that the mouth of the St. Lawrence and the English Channel are at the same distance from the Equator. In which of these two districts is the winter more severe?

71. Read Frobisher's third voyage to the north-west, and Jenkinson's voyage to the north-east of the Atlantic Ocean. Which of these two areas is the colder in summer? Find other passages in Frobisher's journeys which refer to the same thing.

72. What do the two previous exercises teach about the climate in the north-east and north-west parts of the Atlantic Ocean? In what part of these two areas of the ocean would you expect to find icebergs? [A few years ago a huge ship, the *Titanic*, sank after colliding with an iceberg when crossing from England to New York. In what part of the journey might this have happened? Try to find an account of the disaster, and see if your answer is correct.]

73. Find a statement in Frobisher's second voyage that shows that in sailing to the north-west he found the wind blowing from the west.

74. Enter on a blank map all you have learnt about the climate of the North Atlantic from the last six exercises.

75. On page 127 you will find an extract from a book written about the year 1586 by a Portuguese named Lopez Vaz. Mark on a blank map of the Atlantic Ocean the usual direction of the wind in the latitudes of the Straits of Magellan. Does his description of the climate in this region agree with what Magellan and Drake experienced there?

Enter on the blank map of the Atlantic a few words about the climate of this region from these two extracts.

76. Answer the following questions from memory, and then see if your answers are right by referring to the blank maps you have filled up :

- (a) In what direction do the winds blow in latitudes between the Canary Islands and 5° N. of the Equator ?
- (b) In what direction do the winds blow in latitudes between the island of St. Helena and 5° S. of the Equator ?
- (c) In what direction do the winds blow in latitudes north of the Azores Islands ?
- (d) In what direction do the winds blow in the latitude of the Straits of Magellan ?

77. Compare your answers and blank map with a map in your atlas showing the winds over the Atlantic Ocean.

- (a) Which of these winds blow from warmer regions to colder ? from colder regions to warmer ?
- (b) Notice carefully which continental coasts in the Atlantic have the winds blowing from sea to land, and which from land to sea.

Try to remember what you notice.

78. Would the British Islands have the same climate if, being in the same latitude, they were situated near to the east coast of America ? State what facts you know in support of your answer.

79. Which of the travellers mentioned in this book have told us of the long summer days in latitudes near to the poles ? Read again what they have said, and on the map of the world locate the places about which they were writing. Where is "the land of the midnight sun" ? Put the following verse of poetry into your own words, and say where the traveller might have been of whom it is written :

“Four days I steered to the eastward,
Four days without a night,
Round in a fiery ring went the great sun, O King,
With red and lurid light.”

It is taken from Longfellow's poem, entitled “The Discoverer of the North Cape.”

80. Why did the early voyagers call the Equator the equinoctial?

81. On a blank map of the Atlantic Ocean mark the places where you read of the early navigators experiencing storms. From your atlas find the direction of the winds in these parts of the ocean. On the same map mark the places where they were becalmed or where they travelled slowly.

82. On a blank map of the world mark the route taken by Magellan in his great voyage round the world. Would a sailing-vessel to-day go round the world in the same direction? If not, why not?

83. On the same map mark in a different colour the route taken by Sir Francis Drake. Where does this route differ from that taken by Magellan? Give reasons why it was partly the same and partly different.

84. With the help of your atlas trace on a blank map of the Atlantic Ocean Sir John Hawkins' voyage to the West Indies. Which way would he return to England? Why?

85. Was Sir John Hawkins' experience in crossing from Sierra Leone to the West Indies exceptional, or was it similar to what other voyagers experienced? Collect information to confirm your answer.

86. Read what Marco Polo says about China on pages 22 to 25 and 31 to 33 as it was when he lived there at the end of the thirteenth century. Do you consider it was a wealthy, flourishing country? What effect would his description have upon the people of Europe?

87. Why did Columbus, Magellan, Cartier, Frobisher, all try to find a route to Eastern Asia?

88. Find a sentence in Columbus's writings which tells us the reason why he sailed across the Atlantic.

89. Read on page 41 what Columbus found on the other side of the Atlantic Ocean. What did he expect to find? Do you think he was disappointed?

90. Find a sentence in the description of Cartier's second voyage which tells us he was in search of something he had not found on his first voyage. What was he trying to find? Is there any evidence in this book to show whether he was successful or not?

91. Read Columbus's description of the forests in Juana (Cuba), and Raleigh's description of the forests in Guiana. How do these forests differ from the woods here at home? Would it be right to call these forests evergreen?

92. Contrast the St. Lawrence River, as described by Cartier, with the Yang-tse-kiang, as described by Marco Polo. Along which of these two rivers are the scenes seen to-day more changed from what these two travellers saw?

93. Contrast the Indian town of Hochelaga with the Chinese town of Kinsai.

94. Which town in America, as described in this book, is most like the cities of China, as described by Marco Polo? Write down the points of similarity.

95. In which of the following countries has there been most changes from the time when they were discovered by Europeans up to the present time—Canada, China, Mexico? and in which the least? What is meant by "The Unchanging East"? Do you know of any country in the East which has changed considerably during the last fifty years?

96. Compare what Marco Polo says about the people who lived in Northern Asia, with what Jenkinson tells us about the people of Lapland.

97. Read the description of the life and occupations of the

Tartars as given on pages 27 to 30. Do you know of any other people who either in past or present times lead a similar kind of life? In what parts of the world do they live? Trace out the reasons for their mode of life.

98. What does Marco Polo tell us about seed-time and harvest in the land round the Persian Gulf? In what other countries in the Northern Hemisphere are these operations carried out in the same months of the year?

99. What articles were imported at Ormus from India, and what exported from Ormus to India? Have you ever heard of a country near to the Persian Gulf noted for its horses?

100. Of what value to Spain were the new lands in America? [Read Drake, Hawks, Raleigh, Hawkins.]

101. Contrast the ways in which the people of Northern Asia sent their skins and furs to market with the way in which the Spaniards in South America sent the gold and silver from the mines in Peru down to the coast. Account for the difference.

102. Make a list of the animals mentioned in this book as beasts of burden, and the countries in which they were so used.

103. Marco Polo mentions two ways in which ropes are made in different parts of Asia. Search these out and describe them in your own words.

104. Which of the men mentioned in this book were explorers and which traders?

105. What evidence can you find that the Spanish explorers were Roman Catholics and the English explorers Protestants?

106. Why is the French language spoken to-day in part of Canada, Spanish in Mexico, and English in other parts of North America?

107. What does Hawks say about the rainfall in Mexico? In what way is the rainfall in Mexico different from the

rainfall in England? If all the rain fell between May and October in a country in the Northern Hemisphere, would you call it summer rain or winter rain?

108. How does the rainfall in (a) Mexico, (b) Guiana differ from the rainfall near the Equator? What similarity and what difference is there between the rainfall in Mexico and Guiana? Is the rainfall on the west coast of India similar to or different from the rainfall in these countries? [Notice the position of these three countries with reference to the Equator and refer to exercise 26.]

109. Does the statement made by Raleigh about the wind in Guiana agree with what you have found out in previous exercises?

110. When the first circumnavigators of the earth returned to Spain, what mistake did they find in their reckoning of time?

111. In one account of Sir Francis Drake's return from sailing round the world the following occurs: "We arrived at Plymouth on the 26th of September, which was Monday in the just and ordinary reckoning of those that had stayed at home in one place or country, but in our computation was the Lord's Day or Sunday."

Was this error similar to what the Spanish circumnavigators found? Did Drake sail in the same direction as Magellan? Would Drake have found a mistake in his reckoning if he had sailed round in the opposite direction? If so, what would the error have been?

112. Can you explain why the early navigators who sailed round the world found their day and date wrong when they returned? [An explanation is given on page 56. Read this carefully, and try to remember that if you sail westwards you are always a day behind when you return—*i.e.*, you are said to have lost a day, while if you sail eastwards, you are a day in front and are said to have gained a day.]

113. [When a ship sails round the world, or even crosses

the Pacific Ocean from side to side at the present time, the captain, in order to avoid mistakes, either misses one day out, or calls two successive days by the same name and date, when he is somewhere near the 180th line of longitude.]

The following extract is taken from a book, entitled "Round the Empire," by Dr. A. Hill :

"Samoa lies in longitude 170° W., Tonga (Friendly Islands), in 173° W.: nevertheless, while Samoa observes very properly Western time, Tonga takes its calendar from Fiji, Australia, and the East. This arrangement makes the log of the *Oralan* (the name of the ship) perplexing reading. On the voyage between Tonga and Samoa, the 17th of May occurred twice, while between Samoa and Fiji, the 19th of May did not appear at all."

Find these islands in the Pacific Ocean. Trace out the direction of the voyage. Note carefully in which direction the ship was sailing on the occasion when the 17th of May occurred twice, and also when the 19th of May was dropped out of the week. [The places where the necessary change is made, are situated on what is called the "Date Line."]

114. In the same book we also read: "The captain presented us with an extra day, and on this occasion, at any rate, we found it delightful to have two Sundays in one week." Try to explain what this means, and say whether they were then sailing eastwards or westwards.

115. The following is taken from Jules Verne's book, "Round the World in Eighty Days":

"Phileas Fogg had accomplished the tour of the world in 80 days. And now, how could so exact and cautious a man have made the mistake of a day. How did he think it was the evening of Saturday, the 21st of December, when it was only Friday, December 20th, only seventy-nine days after his departure?"

Can you explain how he made the mistake? Which way did Fogg go round the world—westwards or eastwards?

116. Captain James Cook, an Englishman, made a celebrated voyage round the world in 1768-71. On reaching Batavia (Java) his log reads: "Wednesday, the 10th, according to our reckoning, but by the people here, Thursday, the 11th." Which way was Cook sailing round the world?

117. Read carefully the extract by Lopez Vaz on page 127. From what you have learnt about the temperature on the eastern and western sides of the North Atlantic Ocean from other writers, do you consider this extract to be accurate? [We must remember that this man was a Portuguese, and probably knew more about the Atlantic south of Portugal than north of Portugal.] In what latitude are the Straits of Magellan? Do you think it is as cold as or colder in the Straits of Magellan than it is on the coasts of Labrador? Are the Straits of Magellan as cold as or colder than the west coast of Ireland? [Note the latitude of these places.] Examine his statements "for it is as cold in the Straits of Magellan as it is in 60° of northerly latitude," and "for in 40° to the southward the cold is more sharp than in 50° to the north."

118. Read carefully the sailing instructions on page 128, and find the places named. Trace the two routes carefully on a blank map. From what you have learnt about the early navigators, try and suggest why a different course is recommended in summer from that in winter.

119. Gather evidence on page 129 that in the Atlantic Ocean, near to the entrance to the Mediterranean Sea, the westerly winds are found farther south in winter than in summer. Is there any connection between this and your answer to the previous question?

120. Examine the wind map in your atlas and notice the area over which the westerly winds are blowing in summer and in winter in the Atlantic Ocean. Does this confirm what you have inferred from the two previous questions?

121. [You will have found out in Exercise 62 how important the North Pole star was to the early navigators in finding their latitude. But this star cannot be seen when you are south of the Equator, and there is not a South Pole star. Read the extract on page 88, and it will tell you how the early ocean sailors learned to find their latitude when they could not see the North Pole star.]

Draw a figure to show why it is that the altitude of the North Pole star above the northern horizon measures the latitude of the place at which the observation is made.

Then draw a figure to show how to find latitude by observation of the Southern Cross, from the details given in this extract.

122. Which is the more useful to the navigator, the North Pole star, or the Southern Cross, for finding his latitude? Give reasons for your answer.

123. The sun is also used for finding latitude. Draw diagrams for several days in the year to show how this can be done. On pages 115, 116 you will find extracts referring to latitude being found by the sun, and they also tell of the sun being above the horizon at midnight. Draw a diagram to show that the sun would be 4° above the northern horizon at midnight on July 2, in latitude 71° N. (see Jenkinson's voyage.) The distance of the sun from the Equator on that day you can take as 23° N.

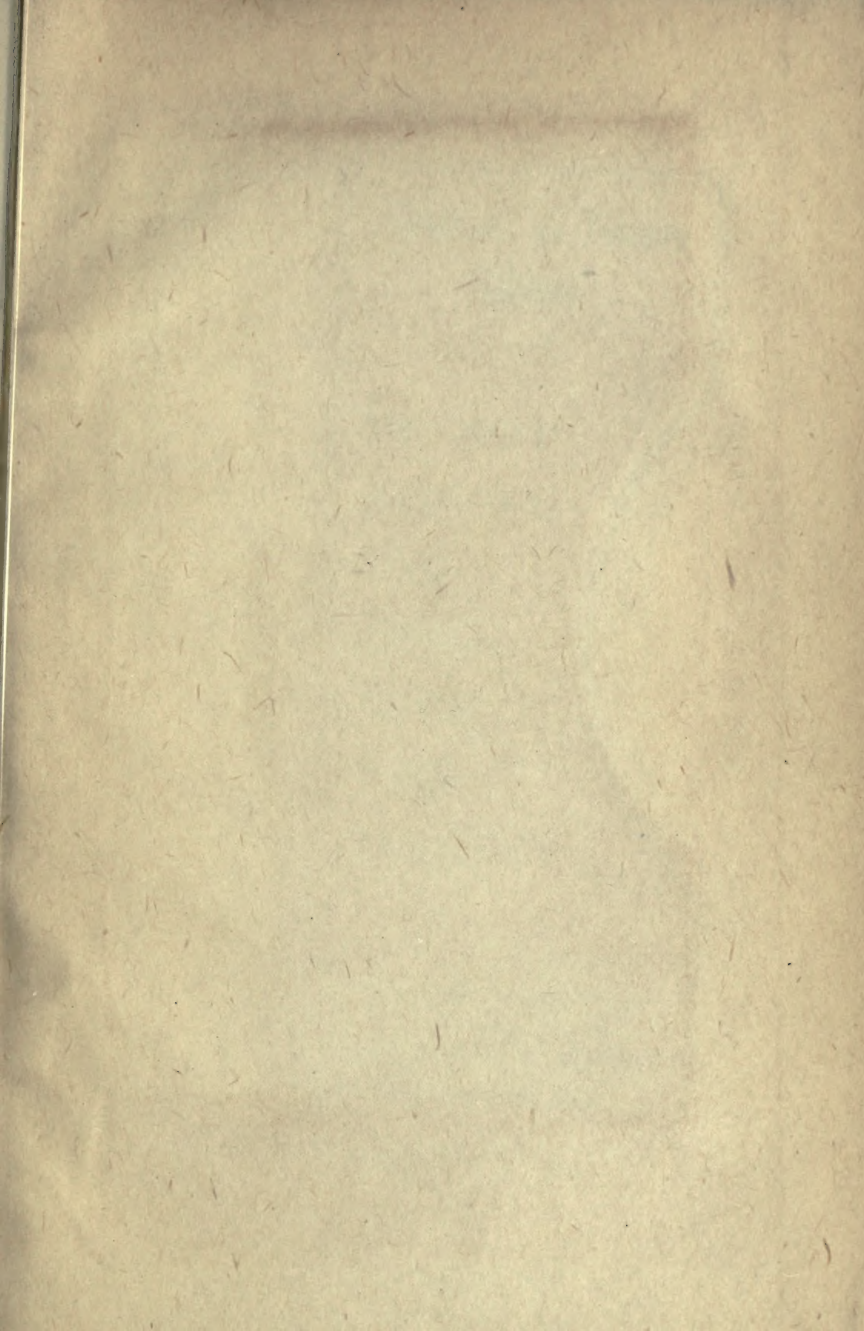
124. Draw a similar diagram from the extract by John Davis on page 78.

125. On a map of the world, or a globe, draw the line which the Pope decreed, should separate the Portuguese possessions from those of the Spanish. [See page 64.] If you use a globe continue this line through the poles right round the world; if you use a map, draw a second line from north to south 180° east of the first, to complete the Pope's Line. If the then undiscovered lands had been thus divided between these two countries, make two lists showing which

would have belonged to Portugal and which to Spain. Now, by reference to your atlas, make two lists showing which lands actually do belong to Portugal and Spain today. Compare these lists and you will probably be surprised. Try to find an explanation.

HISTORICAL SUMMARY

	<i>Date of Journey</i>
Marco Polo - - - -	- 1271-1295
Christopher Columbus - - -	- 1492-1498
Ferdinand Magellan - - -	- 1519-1522
Jacques Cartier - - -	- 1534-1535
Sir Martin Frobisher - - -	- 1576-1578
Sir Francis Drake - - -	- 1577-1580
Sir Walter Raleigh - - -	- 1595-1596
Anthony Jenkinson - - -	- 1557
Sir John Hawkins - - -	- 1564-1568
Henry Hawks - - -	- 1572
Sir Thomas Cavendish - - -	- 1586-1588



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